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Memorial.

MEMORIAL OF MISS KATHARINE BURRAGE.

BY JAMES J. PUTNAM, M.D., BOSTON,

Emeritus Professor of Neurology in Harvard University.

PROGRESS in social service work has always been, and always will be, the expression and outcome, not only of good plans, but also of the devoted labor of good people. Such a person was Miss Katharine Burrage, through whose unselfish care, intelligence and industry the interesting enterprise which is here outlined was made possible. The memory both of the worker and the work are worthy of preservation, for both of them have been sources of inspiration.

The enterprise referred to was the establishment of a class in pottery-making in connection with the Out-Patient Department of the Massachusetts General Hospital. The class was in active operation during the five years from 1908 to 1913, and is still being carried on at the North Bennet Street Industrial School, at the desire of the members, partly as an expression of their appreciation of its intrinsic value and partly as a tribute of affection to Miss Burrage.

Occupations of this sort have long been utilized as an aid to treatment, and the experience of Dr. Herbert J. Hall of Marblehead, with its results interesting alike from the therapeutic and technical standpoint, is familiar to all students of such matters. So far as the writer is aware, however, no such opportunities had been extended to patients attending the dispensary departments of a large hospital, where, as a rule, the rush of getting through the morning's work leaves the medical staff with little time to think of anything beyond the more urgent needs of the patients applying to them for help. With the establishment of the Social Service Department, however, and its rapid progress in efficiency, the therapeutic outlook at the Massachusetts General Hospital became greatly widened, and modes of treatment and modes of appeal hitherto not thought of, became the order of the day. The fourth, fifth, and sixth annual reports of this department give good accounts of the pottery class and its workings, and these accounts are followed in the present sketch.

It should be remembered that the class was organized distinctly in the interests of patients with nervous symptoms and disabilities. What we felt to be most needed was that the women and girls with these nervous symptoms should be given a new interest and a chance to develop their skill in a new direction, and, more than all, that their sense of mutual helpfulness and forbearance should be given an opportunity to expand.

The class met and worked for two-hour periods twice a week in a room furnished by the Hospital. The number of persons present at the meetings varied considerably, as was natural in consideration of the fact that all had their own home tasks to do; but the class membership increased gradually from 13 to 32. An important

outcome was that the class came to be regarded as a group of persons ready to receive intellectual and moral stimulus, from whatever source it might arrive. It was in consequence of the recognition of this fact by interested friends outside the department that the opportunity came to the members to attend certain lectures at the Boston Art Museum, given by Miss Alicia Keyes, and arranged exclusively for them. These lectures were given during two successive years, each course consisting of about six lectures. Moreover, there were two successive summers when the class was invited to spend two weeks at one or another pleasant place in the country, Miss Burleigh or another member of the department accompanying the group.

The following quotations from the Report of 1910 not only show the progress of the class in the respects hinted at above, but also indicate Miss Burrage's share in bringing about these results, for it was clear to interested onlookers that it was to her influence that the good results were largely due.

The Report of 1910 says:—

"The friendly feeling among the women has increased greatly; they visit each other at home and some real friendships have resulted. A visitor would not think it a gathering of invalids if he heard the cheerful voices. One newcomer thought at her first meeting that she was the only sick one there. One woman who was too much of an invalid to get her own breakfast has been so much encouraged by the others that she is now keeping house and doing her own work. . . .

"It has been gratifying to the teacher, Miss Burrage, to find that taste changes with character. There has been a marked improvement in the designs modeled, some of them being really beautiful. One woman who joined the class, half-heartedly, came to the conclusion that she was not 'playing fair' when she did not come regularly and try to work. Though she was one of the initial members of the class she had done practically nothing the first eight months. She then took hold with a will, developed real talent, took clay home with her, and now rarely comes to a meeting without some dainty thing she has made at home. . . .

"As an experiment we admitted to the class one patient who had been in Danvers' Insane Hospital and who was at home on an extended visit. Most of the class were previously told of her troubles, but at first she bothered some of them a good deal by talking about seeing faces in her sleeves and by getting quite excited when she spoke of the hospital at Danvers. It was finally left to the class to decide whether she should be permitted to remain, and they all declared in her favor. Gradually she has grown more at home; she now enters into the spirit of the class, has become devoted to Miss Burrage and has gained in every way.

"The class has served another purpose. In dealing with a patient we get very near to her in certain respects, but she shows quite another side of her character to Miss Burrage. Through this additional knowledge we get a much bigger view of the patient. For instance, Miss Burrage gets a much better idea of the patients' home life from what they say as they talk together than they are able to give (me) when they try to describe it. The unconsciousness pictures are by far the best and most trustworthy."

Miss Burrage was born in Lowell and began the study of clay-modeling in the Textile School of her native city in 1899. In 1905 she came to the North Bennet Street Industrial School, and remained connected with that institution, in one way or another, through the rest of her life. In 1912 she was appointed instructor of the modeling classes in the Boston public and evening schools. Her connection with the Massachusetts General Hospital began in 1908.

The reasons above given for the organization of the class at the hospital appealed very strongly to Miss Burrage from the beginning. She was not only a teacher of clay-modeling, but was ever a friend in the best sense to all those with whom she came in contact,—the more so if she felt that they had traits and talents which it lay within her power to stimulate. Under her instruction of the class at the Massachusetts General Hospital, technical success was systematically subordinated to the development of individual power, taste, and character. She could never have worked whole heartedly on any other plan, and if she had tried to do so it would have been at the sacrifice of an essential element in her principles and in her influence upon others. She recognized at once that the kinds of talents which the members of the class exhibited varied considerably in correspondence with the various dispositions. Some of the workers were small of stature, thin-faced, finical in temperament; others were large in stature, big-hearted, capable of flying into passions and of getting quickly over them. The same characteristics were seen in the pieces that they produced, and the recognition of these facts enabled Miss Burrage to understand her pupils better, and indirectly to help them to modify their defects. The different members of the class came, of course, to lean upon her, in one sense, but all her efforts were devoted to making them independent, and they all gained in this respect.

After the class had been in full operation for some time, Dr. Robert B. Osgood, one of the orthopedic surgeons of the Hospital, made it possible for the patients in the orthopedic ward to take advantage of the teaching, and a young girl who had been a prominent member of Miss Burrage's class became their teacher.

The year before Miss Burrage died, the hospital authorities decided to start a department of their own, conducted not on the plans indicated above, but rather for the purpose of giving employment to the handicapped patients and finding a real market. As a consequence of the introduction of this plan, the pottery class could no longer continue its work at the hospital. But Miss Burrage's interest in the enterprise which she had had so much at heart outlived this check. Determined as she was to make the undertaking a success, she had been in the habit

for some time of carrying the pieces of unbaked pottery to the North Bennet Street Industrial School, where they were glazed and fired. Now she proposed to transfer the entire class there, where the generosity of the directors offered a new home, and to carry on the teaching without charge. This was actually done, and the real interest of the members of the class was shown by their continued attendance in the new quarters in the same numbers in which they had previously come to the Massachusetts General Hospital.

In May, 1914, Miss Burrage died, and in June the members of the class came together to express their grief at their personal loss and their appreciation of the services Miss Burrage had rendered. At this meeting the suggestion was made that the class might perhaps be continued in the same form if the women would contribute something toward the salary of a new teacher. They gladly agreed to hold two meetings a week, and to contribute, each, twenty cents a week toward the teacher's salary. The plan then formulated has actually been in operation during the past winter. Miss Jennie Jansen, the pupil of Miss Burrage, who two years previously had carried the work into the orthopedic ward of the Massachusetts General Hospital, was chosen as teacher.

It is too early to say how the new enterprise will work out, but that something will come of it is certain. One interesting result already observed is that the class has undertaken to act upon principles of self-government, in accordance with rules determined upon by the women as a whole, or in separate committees. Funds are hard to get in these days, and all the members of the class are poor, while many of them live at a distance from the city, making the expense of carfares a necessary condition of their attendance. But their very desire to come has shown how confidently one may rely upon the best qualities in human nature, and how much good a single individual may accomplish who is able to see his fellow-beings at their present best, and to see, under their present best, the evidence of something better.

Original Articles.

GUN-SHOT WOUNDS OF THE SOFT PARTS.

By Beth Vincent, M.D., Boston

AND

Robert B. Greenough, M.D., Boston.

Wounds of the soft tissues in the cases at the American Ambulance, under the care of the Harvard University Unit at Neuilly-sur-Seine, were produced, for the most part, by missiles such as shrapnel balls, rifle bullets or shell fragments. Among 318 such cases there was but one small bayonet wound. Two hundred and thirty-two of the cases had only one wound. Eighty-six of the patients had been struck by more than one missile, and in fifteen of the cases a single missile had caused multiple wounds. In one instance eight separate wounds were made in one individual by the passage of a single rifle bullet.

REGIONS.

An analysis of these cases in regard to the regions involved shows that there were 24 wounds of the head and scalp, 76 of the face and jaw, 64 of the trunk, 55 of the upper extremities, and 80 of the lower extremities.

Compound fractures of the jaw were of frequent occurrence; there were 63 fractures in 76 wounds of the face. The face wounds were often badly lacerated, with extensive loss of tissue. The treatment of the jaw fractures was carried out by the Dental Department of the Ambulance, by means of interdental splints, wedges, wiring, and bridging work, and very remarkable results were obtained by the ingenuity and skill of the members of this service. The face wounds were cared for on the general Surgical Service, and such operations as were needed for drainage, as for plastic closures of defects and deformities, were performed by the surgical staff.

Wounds of the trunk included 21 of the chest, 7 of the spine, 8 of the abdomen, 4 of the pelvis, and 24 others of a superficial character.

Of the extremities, the right and left side suffered in about equal proportions: right arm 28, left arm 27, right leg 38, left leg 42.

NATURE OF THE WOUNDS.

The wounds were of every kind,—lacerated, penetrating, perforating, or wide surface abrasions. They varied from the extensive, badly lacerated wounds of the jaw, made by irregular shell fragments, to the cleanly perforating bullet wounds of the thigh, or the small shallow penetrating wounds of the leg, often multiple, due to minute bits of exploded shells. When received at the American Ambulance the majority of the cases were from twenty-four to seventy-two hours old, and by that time the wounds were all very much alike in one respect—with few exceptions they were frankly septic. In some, the infection was caused by the gas bacillus, but as a rule the ordinary pus organisms were found. A more detailed description of the bacteriology of these cases appears in the report of Drs. Rogers and Benet, who were in charge of this part of the service.

The infection of these wounds was due mainly to foreign material, such as pieces of the soldiers' clothing which had been carried into the tissues by the missiles. This established a focus

FIG. 1.—Shell wound of buttock.

FIG. 2.—Bullet wound passing through soft parts of right arm, grazing abdomen, and producing compound fractures of both bones of left forearm.

of infection, from which more or less severe sepsis was likely to develop in spite of the application of a first aid dressing.

TREATMENT.

Occasionally a patient was admitted with a clean wound, or one so slightly infected that a

FIG. 3.—Multiple shell wounds of face and shoulder produced by hand grenade.

FIG. 4.—Wound of face with destruction of upper lip.

sterile dressing could be applied and the soldier sent to the wards. This was the exception.

The usual procedure was as follows: The patient was given a general anesthesia—ether, as a rule, sometimes gas and oxygen, and in a few instances chloroform,—the skin was shaved, painted with iodine, and the wounds enlarged as much as the extent of the infection required; the crushed edges of the wound of entrance and all necrotic tissue were excised; all the foreign material, such as dirt or particles of clothing, was removed. Some wounds were irrigated, others were simply wiped dry. Drainage was accomplished by means of cigarette wicks or

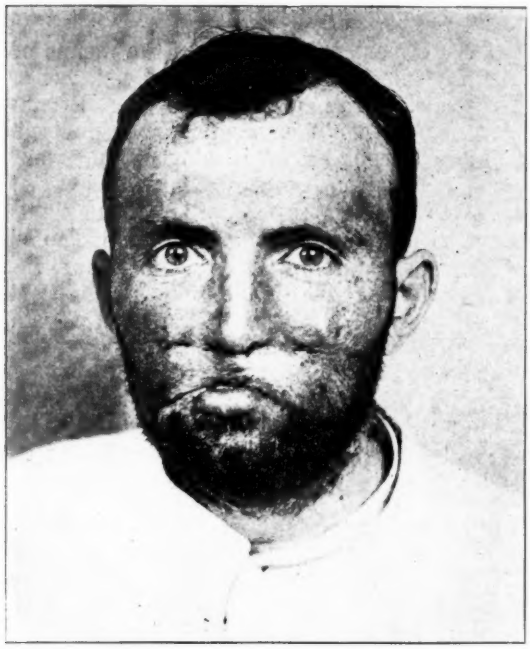

FIG. 5.—Result of first plastic operation for repair of Fig. 4.

drains made of folded rubber tissue. Raw surfaces were covered with sheets of the rubber tissue to keep the gauze of the dressings from sticking to the wound. While no particular search was made for missiles at this time, they were often discovered and removed during the exploration. At times pieces of clothing were found just beyond, or even wrapped around, the missile. Wounds from which the foreign body and all particles of dirt and clothing had been removed usually cleaned up very rapidly in the wards. When pieces remained in the tissues, especially clothing, the course of the sepsis was always prolonged, and secondary abscesses often necessitated another operation. The after-care of these cases was quite as important as the operations. The dressings, which were very painful, had to be done frequently and with great care. The use of rubber tissue for wicks and as a protective covering, saved these patients much suffering. Some of the most septic wounds were given continuous irrigations of sodium-hypochlorite solution (1:200), others had frequently changed wet dressings, but most of the cases were dressed with plain sterile gauze. Even the very septic cases did surprisingly well, due, in part, to the good general condition of the French soldiers, and in a large measure to the skill and care with which they were treated by the house-staff. A well balanced unit needs, for such work as this, comparatively few surgeons to do the operations, but should have a large number of well trained men to look after the patients in the wards.

Secondary sutures were done on some cases with extensive granulating surfaces, with good results, and the patients were saved many days in their convalescence by this procedure.

FIG. 6.—Bullet wound of chin and jaw.

Wounds that healed with a deformity or an unsightly scar were treated by plastic operations, and furnished some of the most interesting and instructive surgery of the service.

FOREIGN BODIES.

In many cases the kind of missile could be surmised only from the appearance of the wounds. Shell fragments gave ragged wounds, while bullets and shrapnel balls often left a clean cut tract, with small wounds of entrance and exit. Definite data were obtained in regard to 103 missiles which lodged in the tissues. The majority (77) were shell fragments, as might be expected from their irregular shape and comparatively low velocity. Fourteen were shrapnel balls, and thirteen rifle bullets. In one case the missiles were the fragments of a pair of field glasses, which had been driven into the face of an officer, who was looking through the glasses when they were struck by a rifle bullet.

While the first operation on recently admitted cases with gross sepsis was devoted primarily to cleaning the wound and making free drainage, missiles which had lodged were often located and removed in the course of this procedure. It was not, however, considered wise to make an extensive search for a foreign body at this time, and thereby possibly spread the infection to uncontaminated tissues. Since the limits of the infection was likely to be defined by the penetration of the missile and pieces of clothing, the pus in the wound often proved a valuable guide to the foreign body. In this way more than half the missiles were found at the first opera-

FIG. 7.—Result of first plastic for repair of soft parts, and dental bridge supplied by Dental Department.

FIG. 8.—Bullet wound of jaw, cheek and neck.

tion, frequently without the aid of the fluoroscope or x-ray plates.

Lodged missiles not removed at this time were allowed to remain in the tissues unless they caused a persistent sinus or made trouble by reason of their position near nerves or other important structures.

When the secondary removal of a foreign body was indicated the operation was postponed, if possible, until the wound had healed or at least had passed the stage of acute sepsis, and the foreign body was then located as accurately as possible.

LOCALIZATION OF FOREIGN BODIES.

At the American Ambulance the means of localization most frequently employed were the fluoroscope, x-ray plates, and the Bergonier electro-magnet. This magnet was devised by Professor Bergonier, of Bordeaux, and was operated with an alternating current in such a way as to produce rapidly alternating fields of attraction and repulsion, such that the shell fragment was put into rapid vibration in the tissues. When the magnet is brought close enough to a lodged missile, this vibration can be detected by placing a hand on the skin between the magnet and the foreign body. The place of maximum vibration is noted, and an incision made at this point. This method can be applied to missiles in the soft tissues only, and not too distant from the surface of the skin.

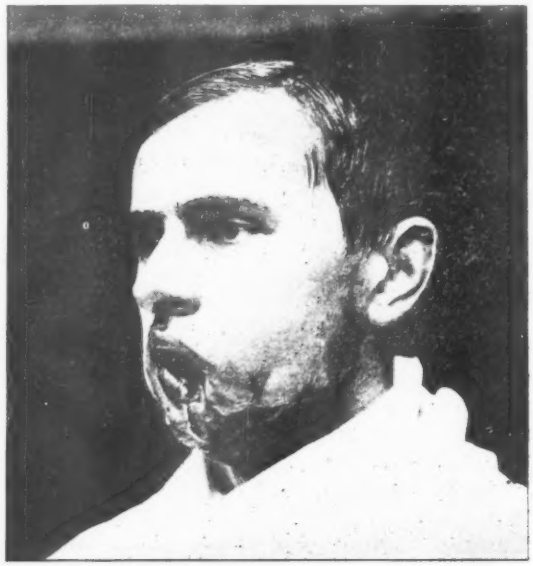

FIG. 9.—Condition before first plastic operation on Fig. 8.

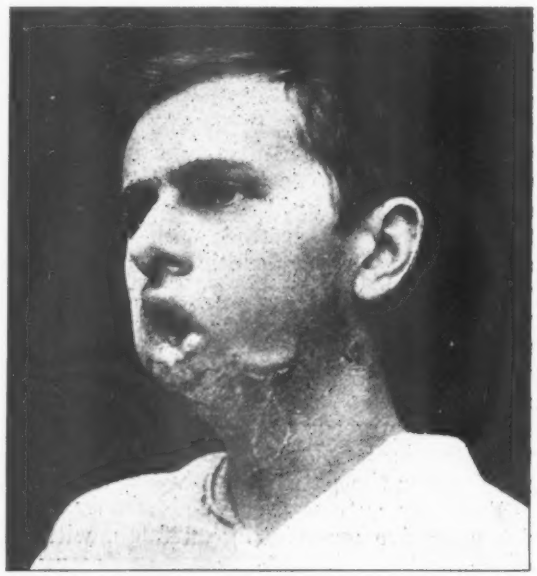

FIG. 10.—Condition after first plastic operation on Fig. 8.

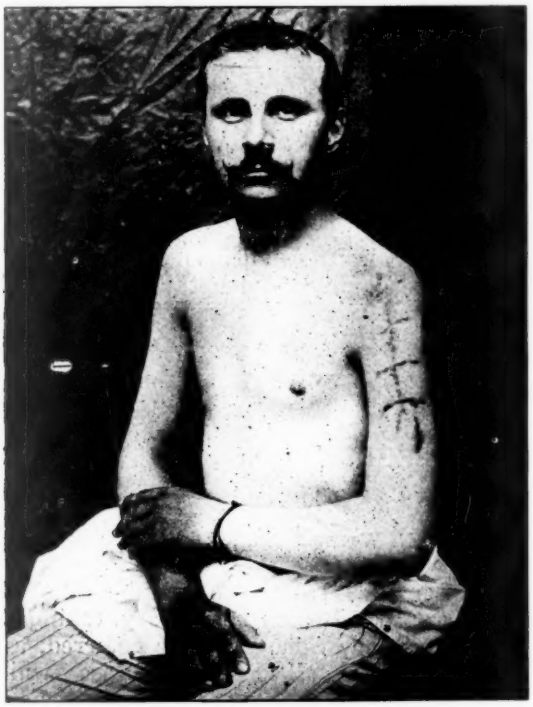

FIG. 11.—Secondary suture of shell wound of shoulder, similar to No. 1.

An ordinary electro-magnet was often used to facilitate the extraction of the missile after it had been located in the course of an operation. When a foreign body could be felt by the finger or some instrument, a metal probe, with its outer end resting against the magnet, was inserted into the wound until it touched the piece of metal. The probe became magnetized by contact with the magnet, and in turn attracted the missile so that it was made to adhere to the probe while this instrument was withdrawn from the wound. In some cases a sinus could be explored with the probe without an anesthetic, and pieces of metal extracted in this manner. While very useful under certain circumstances, this method has definite limitations. Missiles of lead alone, as the round shrapnel ball, are not attracted by the magnet. Moreover, it is first necessary to find the foreign body in

FIG. 12.—Shell fragments in soft parts around left hip.

FIG. 13.—Shrapnel ball lying in front of neck of femur. Joint involved secondarily with infectious arthritis.

FIG. 14.—Shell fragment buried in muscles of back after traversing pleural cavity. Empyema; drainage, recovery, fragment not removed.

the tissues—so often the only difficult part of the operation—before the probe can be used, and unless the magnet is a powerful one, the hold on the missile is so slight that the least resistance will break the contact as the probe is withdrawn. In spite of these disadvantages, this method was applied successfully in certain cases at the American Ambulance. Foreign bodies in the brain or lungs can be recovered in this way with very little trauma to the tissues. In two cases Dr. Cushing removed shell fragments from the brain by this method, and Dr. Blake employed it successfully on a piece of shell buried deep in the pleural cavity.

For routine work the fluoroscope proved to be the most rapid, accurate and economical means of locating lodged missiles. The examination was made by an expert radiologist, Dr. Jougeas, who described the position of the missile and made marks on the skin to guide the surgeon at operation. With a bullet in the thigh, for example, the skin was marked at four points in two planes, at right angles to each other, so that the intersection of imaginary lines connecting the skin marks established definitely the position of the foreign body. In addition, the distance of the missile from the surface of the skin could be determined in centimeters by the method of triangulation. With these figures to guide the depth of the incision and the marks on the skin to give the direction, a missile was often found without difficulty, providing that the patient was placed on the operation table in exactly the same position in which the fluoroscopic examination was made.

X-ray plates taken in two planes were sometimes used alone, but difficult cases often required both the plates and the fluoroscopic examination, as it is a distinct advantage to have the plates or a print in the operating room, so that the surgeon can acquaint himself with the number and size of the foreign bodies and observe their relation to some bone landmark which he might expose during the operation.

Local anesthesia sufficed for simple cases, but what promised to be a short operation, at times developed into a long search, so that, as a rule, a general anesthesia was indicated in these cases. Gloves were worn at the beginning of all operations, but the end of a difficult one often found the surgeon working with bare hands, to increase his sense of touch. Occasionally, interesting points in anatomy would arise in these operations, since the wounds involved every part of the body, and a search for the missile might lead the operator into regions seldom explored in the ordinary surgery of civil life.

At the American Ambulance, where these various methods of localization could be applied, the operations for the recovery of lodged missiles were usually successful. An attempt to remove the foreign body was not made in every instance. There were 103 such cases—in 80 the missile was recovered, and in 23 it was not removed. Four patients died before any search was made for the foreign body, while the 19 other cases represent, for the most part, those in which the missile was left "in situ" at the discretion of the surgeon. This decision was made in cases where the fragments were small and numerous or because of an absence of symptoms which could be attributed to the presence of a foreign body. In a few instances the position of the missile made its removal so difficult that the benefit to be obtained did not justify the risks of the operation.

SOME OBSERVATIONS ON 600 HEART CASES.*

BY MARK H. WENTWORTH, M.D., CONCORD, MASS.

IN March, 1912, I began to assemble all of the heart cases at the Boston Dispensary, taking the new cases as they came in, those referred, and sending letters to all of the old cases which could be found on the records, asking them to come for examination. Between March, 1912, and May, 1914, there were thus assembled 600 cases of children between the ages of 6 weeks and 15 years with one or another form of heart weakness, rheumatism or chorea. These last two were included because of their supposed common etiology and the frequency with which cases of rheumatism and chorea develop cardiac lesions. Of the whole series there were but 30 which had rheumatism *not* followed by a heart disturbance of some sort,—and most of these were admissions of comparatively recent date; some of them had moved and some did not reply to the letters, so that it is quite possible a number of those few remaining cases have since developed some heart lesion.

The list shows:

Acute endocarditis	249	cases	or	41.5 %
Chronic endocarditis	33	"	"	5.5 %
Mitral sten. and regurg.	29	"	"	4.8 %
Aortic and mitral regurg.	12	"	"	2.0 %
Aortic stenosis	1	"	"	.16%
Aortic regurgitation	2	"	"	.33%
Tricuspid regurgitation	1	"	"	.16%
Endocarditis and myocarditis	26	"	"	4.3 %
Functional	26	"	"	4.3 %
Intermittency with other signs	1	"	"	.16%
Chorea with heart involvement	115	"	"	19.1 %
Chorea without heart lesion	61	"	"	10.1 %
Rheumatism without heart involvement	30	"	"	5.0 %

Etiologically the acute and chronic endocarditis cases showed:

155 with previous rheumatism or tonsillitis.
37 with previous acute infections.
88 untraceable.
1 nephritis.
1 malaria.

* Read at a meeting of the Chirurgical Society of Boston, held on Oct. 22, 1915.

Etiology mitral lesions:	
Rheumatism	21
Acute infection	8
Unknown	12
Etiology of aortic lesions:	
Rheumatism	6
Acute infection	3
Unknown	6
Etiology tricuspid:	
Unknown	1
Etiology myocarditis:	
Rheumatism	14
Maternal specific	1
Specific	2
Acute infection	2
Unknown	2
Etiology congenital:	
Maternal specific	1
Specific	1
Etiology intermittent without other sign:	
Unknown	1
Etiology chorea with heart:	
Rheumatism	39
Acute infection	13
Unknown	60
Trauma	3
Etiology chorea without heart:	
Rheumatism	18
Acute infection	9
Unknown	33
Trauma	1

Thus, of all the cases in this series 270 were apparently caused by rheumatism or tonsillitis, 82 by acute infectious diseases. Etiology undetermined in 239 cases. From these figures it is evident that rheumatism is the factor to be most greatly feared, and consequently the most strenuously attacked.

Children are far more liable to attacks of rheumatism than others, recurring attacks are more frequent in them, and cardiac involvement following rheumatic infection is more frequent. The greatest danger is in the recurrence of an attack, but we know so little of the methods of infection and the processes of its invasion into the system that we can act only empirically. If it seems that a locality predisposes to rheumatism, I think we are justified in advising the removal of the patient to another climate when the circumstances permit; the choice must again be empirical, but most cases are found to do better on the whole in a high, dry, warm, and more or less equable climate; hot sulphur and hot saline baths, baking in superheated air; internally, iron, arsenic, cod liver oil, potassium iodide, the salicylates, best used in the form of aspirin in bicarbonate of soda; tonic—digitalis. (The only forms of cardiac stimulant I have used are Tr. strophanthus and Tr. digitalis.)

As the tonsils seem to be a common mode of entrance for the infecting organism, are we justified in always recommending their excision? I have no figures to give on this point, unfortunately, but I have recommended a large number of children in the past to have the tonsils removed, and having seen a fairly good percentage of these cases return with reinfections, I have doubted the wisdom of the procedure, and seldom advocate it now except in cases which have had marked recurring attacks, or where it is evident from the past history that the child is subject to tonsillitis. Of the results from this conservative method, I do not yet feel justified to speak, although I am well aware that many advocate enucleation upon very slight pretext.

During the acute symptoms, or while there is failure of compensation, we must limit the physical activity to a pretty marked degree. I feel sure that three of the cases in my series died because of lack of sufficient rest. I watched them carefully in the clinic and in their homes, and noted the recurrence of edema, dyspnea, orthopnea, and precordial distress which accompanied their exceeding the bounds of rest which had been laid down for them, and which, (in spite of their distress occasioned by the exertion), they could not be made to desist. This, I feel assured, was the case in other fatalities in the series which I did not personally attend.

In the *American Journal of Diseases of Children*, August, 1913, vol. vi, pp. 104-106, Dunn says: "It is questionable how far our efforts should reach in limiting the normal activities of the child. We must consider the question of lessening the disability in adult life, when the heart must be able successfully to cope with the strain of a normally active life. If such ability is due to a gradual adaptation between the child and the heart, it is very probable that too much limitation of the activities of childhood will prevent this adaptation from taking place." I quite agree, after the acuteness or even subacuteness of the symptoms are gone, but I believe from observations on the above cases that anything more than moderate activity for a considerable period after an acute infection does irreparable harm.

The diseases which may have a causal relation to cardiac disturbances are measles, chorea, tuberculosis, influenza, small pox, diphtheria, pertussis, and scarlet fever; but colds and coughs and adenoids must be considered, and more especially, pharyngitis and tonsillitis.

Endocarditis is by far the most frequent lesion found in chorea, and from my series of 176 cases, the fact that 115 showed cardiac disturbance, 65.3%, is significant of the fact that chorea as such, or the etiological factors in chorea, have a detrimental effect upon the heart; or is it possible that endocarditis is the cause of the chorea, particles of fibrin and vegetations from the valves passing as emboli to the cerebral vessels and there setting up the irritation resulting in chorea? In none of these cases were there any signs of heart disease observed prior to the development of chorea. This in itself is not sufficient evidence to exclude the pre-existence of a heart lesion, but the 61 cases, 35.6%, of chorea occurring without any evidence of heart infection tend to overthrow this theory.

Osler gives somewhat similar evidence in his monograph on chorea. Of 140 cases observed

more than two years after an attack he found the heart normal in 51, in 12 there were functional murmurs, and in 72 organic disease. His examination comes at a later period, but shows about the same percentage of permanent cardiac injury. Kirkes and others also state that endocarditis is the most frequent lesion in chorea, but their exact relationship is as yet undetermined.

When we consider that choreic patients are usually of the high-strung, nervous, often anemic type, it is natural to expect to find rapid pulses, and this is what we find much more commonly than arrhythmia; this is accompanied by a diffuse impulse at the apex and throbbing carotids, with a systolic murmur at the base and often at the apex, but the endocarditis of chorea is usually of the simple or warty form and is, Hirschfelder tells us, of itself not dangerous, but there is always the danger of its leading to sclerotic changes in the valves which produce incompetency.

Two hundred and fifty-seven observations were made on the blood pressure, an effort being made to see how it was influenced by rest, and by rest and Tr. digitalis medication.

In the cases where *no drug* was used, the patients simply having stated periods of rest and a supervision of their hygiene, the effect produced upon the *systolic pressure* showed nothing striking; there was a tendency to a raising of the pressure slightly, but it was not marked. The *diastolic pressures* showed a slight reduction, this being invariable where the first readings had been very high, and in these cases the reduction was correspondingly great, and the readings as a whole approached comparatively near normal (*i.e.* 45-60). The *pulse pressure* (normal 30 to 50?) was moderately to decidedly increased, *i.e.* from 2 to 40 m.m., over periods ranging from one week to one year.

Under the influence of *digitalis*, which was combined with rest, *the results on the systolic pressure* showed a much greater and more uniform tendency to rise. I say tendency, because there were a good many cases, showing a not unusually high systolic pressure, which fell somewhat during treatment.

The diastolic pressure when treated with digitalis showed much the same readings as when the patients were given rest only. There was certainly not enough difference to indicate any physiological effect from the drug.

Digitalis should not be used with a free hand or indiscriminately. Its action should be watched carefully. The heart rhythm is distinctly slowed by the use of digitalis, and the force of the apex beat is much strengthened and slowed, thus slowing the pulse and increasing its tension. Where no appreciable effect is noted on the pulse one should examine the heart and general circulation before increasing the dose, as it may already have had the effect of increasing the output of urine, relieving the dyspnea and decreasing the edema, which may be all you can afford to attempt at one time in a given case.

In cases showing degeneration of the heart muscle, such as fatty heart, digitalis may be absolutely contraindicated, for the increased pressure thus brought to bear may cause serious damage.

In cases of tachycardia I found that minute doses of aconite or strychnine are used to better advantage than digitalis in reducing the accelerated pulse.

ARE THERE DIFFERENT ANATOMIC TYPES? A REPLY TO DR. HOOTON.

BY JOEL E. GOLDTHWAIT, M.D., BOSTON.

IN the issue of the JOURNAL for Jan. 27, the article by Dr. Hooton, on "Some Anthropological Comments upon the So-Called Herbivorous and Carnivorous Types of Man," shows that the Doctor has missed entirely the purpose of the Shattuck Lecture.

The real reason for that Lecture was to emphasize to the profession the need of the study of the *individual* in the interpretation of symptoms which the medical profession is expected to relieve. No one probably appreciates more than I the desirability of careful anthropological study, but probably no one can appreciate better than I the fact that the study of the average, or the composite, of any group will not explain the variations from that composite which may be present in the individuals of the group. The work of the anthropologist, as is true of the teaching of the works of anatomy, has been based upon the study of groups of individuals and the deductions represent studies of the average formed from these groups. This makes it possible for Dr. Tait McKenzie to model his beautiful figure of the athlete, but it does not help the many individuals who are formed so very unlike the ideal figure, and whose peculiarities are lost in the composite study of the whole.

The practical result of this is that the medical student has been taught, and is still being taught, that the human body is of one type. That this type exists there can be no question, but that there are departures from this type there can also be no question, if the study of the individual is approached with the "large field of vision" which the Doctor apparently desires.

To appreciate these differences or departures from type, one must study the individuals of the special race and not try to contrast the people of different races and expect to get much practical help from that. For instance, there is the broad and the slender type of Anglo-Saxon; there is also the broad and the slender type of Scandinavian. This is also true of the Asiatic, of the Australian, or of any of the other tribes or races. It is by comparing the individuals of

one race that real progress will be made, and not the comparing of the average type of one race group with the average type of another race group.

The terms "carnivorous" and "herbivorous" which were used are undoubtedly not scientific and will undoubtedly be replaced by other terms when sufficient investigation has been carried on to make such selection possible. These terms are, however, suggestive and the more one studies comparative anatomy the more suggestive they become. The fact, however, that they were not considered satisfactory for final terms by me is shown by the fact that in the description of each group not only are these terms used, but all of the other terms which had been used by the different writers. Any suggestions which Dr. Hooton has to make that will make it possible to choose more satisfactory terms will, of course, be welcomed.

My use of the term "African" in the Shattuck Lecture is, of course, one which leads to fair criticism. My intent in using the word was to have it apply to the Negro, or the African, as we are familiar with him in this country. In the Negro, as we see him, we have, of course, the slender as well as the heavy type, but the slender is much less common, undoubtedly largely because of the poor hygienic condition under which the negroes have lived, this slender type being much less resistant to disease than the heavy type.

As to the shape of the vertebra, all that I will ask is that the investigator will make the study by means of the x-ray or by actual dissection of the lumbar vertebra in the different types and see if the characteristics described in the Shattuck Lecture do not exist. The Doctor speaks of certain characteristics which were shown in one of the illustrations of the lumbar vertebra as being peculiar to the dorsal vertebra. These characteristics which are peculiar to the dorsal vertebra, as they show in the lumbar vertebra, have all been described by me in a previous article. The crescentic articular process, which is considered normally a part of the lumbar vertebra, frequently does not exist, but instead the articular process is flat, as is a normal feature with the dorsal vertebra. The presence of these flat articular processes in the lumbar region is particularly frequent on the last two lumbar vertebrae. This can, of course, be demonstrated by x-ray as well as by dissection.

In appreciating the variations in the shape of the vertebrae it will undoubtedly be interesting to Dr. Hooton, as it will to anyone who is interested in the general subject, to study the remarkable collection of spines at the Warren Museum of the Harvard Medical School, which was prepared with great care by the late Prof. Dwight.

The main purpose of the Shattuck Lecture was to call the attention of the profession to the fact that there are different types and to make the profession realize that the variations from the so-called normal type are the ones most likely to be seen as patients, because they are most liable to disease conditions. It was the hope that, by stimulating the profession to this kind of investigation of their patients, a new channel would be opened for investigation so that the knowledge of medicine would be advanced. In other words, it was to do just what Dr. Hooton suggests in his sentence,—"The point that I wish to make is that Dr. Bryant has left out of his calculations the changes in bodily form due to age, and who knows to what extent the length of the gut may vary in its absolute and relative size during the life of the individual?"

It was exactly this kind of investigation that I hoped to stimulate, and that I am sure Dr. Bryant would welcome. Dr. Hooton here admits that the anthropologist does not know about these features. The medical profession knows little more, but it is probable that, if such investigation as has been suggested can be carried on, the knowledge which we all desire may be obtained and the anthropologist perhaps gain knowledge from such investigation as well as the physician.

Clinical Department.

ABSCESS OF THE TONGUE WITH REPORT OF A CASE.

By Joseph Prenn, M.D., Boston.

The text-books on nose and throat say very little on this subject; some omit it altogether. The infrequency of this condition (not many cases are on record), the difficulty of diagnosis in its early stages, the striking picture and pronounced symptoms in its later stages, made the writer think it a case worth reporting. The etherizer and the surgeon, especially the former, have a task before them similar to retro-pharyngeal abscess with edema of the glottis.

Acute abscess of the tongue does not happen often. The great vascularity of this organ offers it a superior resistance, and the abundant various organisms harboring in this region probably establish a local immunity. The two main factors upon which disease depends generally, namely, the resistance of the tissue and the virulence of infection, hold true here also. Trauma, therefore, such as biting of the tongue, irritation and wounding of the mucous membrane by bad teeth, stempipe, ranulae, and calculi in the various salivary glands, or foreign bodies in the tongue when the resistance of the tissue is lowered, may serve as a factor to bring about suppuration.

Follicular abscess of the lingual tonsil may by extension through the follicles of the tongue transmit the infection and form an abscess. The

lessened resistance of the body generally, however, such as run-down condition, or exposure when the entire body is thrown out of gear, seem to be necessary accompanying factors.

Diagnosis.—Early diagnosis is difficult, as the patient may complain of a slight sore throat, there may be only a beginning glossitis and pain in the head, temperature may be normal. The steadiness of the pain, as time goes on, and its distribution, however, are characteristic, and therefore make one suspect a possible forming abscess. The pain is felt acutely and steadily in the tongue, neck, ear and temporal region, growing progressively worse. The pain is so severe that it makes one think of tic douloureux, but the steadiness of the pain points to some constant pressure and therefore differentiates it from trigeminal neuralgia. The regions affected are due to the fact that the lingual nerve supplying the anterior two-thirds of the tongue with sensation connects with the auriculo temporal of the third division of the fifth. The glosso-pharyngeal nerve supplying the posterior third of the tongue with sensation sends off the tympanic branch (Jacobson's nerve). In the later stages the symptoms are more pronounced and more numerous, and present a distinct picture. There is a temperature of about 101. The patient has good color, in spite of the exhaustion, due to the congestion,—the same as a person wearing a tight collar would have. The tongue is swollen two or three times the normal size, and is coated.

There is great difficulty of deglutition, the patient cannot open his mouth more than a slit, and speech is inarticulate. Movement of the tongue is painful. The side of the tongue where the abscess is, is sore to the touch, and the pain in the head is very severe. Fluctuation is very hard to make out on account of the elasticity of the tongue, and it may be absent altogether, as the pus burrows down. The sub-maxillary glands are swollen and tender, and if the posterior third of the tongue is affected there will be swelling of the cervical glands. On palpation the under surface of the tongue is hard, and there is one spot where it is thicker and more tender to the touch,—the seat of infection.

Prognosis. If left alone, unfavorable. There is a marked exhaustion, it may be even dangerous to life from spasm of the glottis pressing upon the superior laryngeal nerve. Septic pneumonia and pericarditis may develop when there is a streptococcus infection. The abscess sometimes in the later stages, though rarely as the pus burrows deep in the tissues, may break spontaneously in the mouth, where again there is danger of the pus going down the larynx, if the patient is asleep, and causing asphyxia.

Treatment. Operation. It may perhaps be done under local anesthesia by injection of novocain, but the patient who is suffering such intense pain, with inability to open his mouth, will hardly submit himself to such procedure. General anesthesia, therefore, must be administered. Perhaps anesthetizing the patient in a sitting position will obviate much of the danger of asphyxiation and not necessitate a tracheotomy. Butlin reports a case of asphyxia during anesthetization by breaking of the abscess during manipulation into the larynx. The sitting position, the writer believes, would obviate this danger. The anesthetizer will have little difficulty in administering the narcosis, as the patient welcomes it, much the same as a pregnant woman in the latter stages of labor. The incision should be made about half an inch in length, under and parallel to the side of the tongue, having previously introduced the finger to ascertain the most tender point. That point will be found to be more thickened than the rest, and pus ought to be gotten there. To lift up the tongue and make the incision under its tip is more dangerous on account of the ranine veins and artery and lingual nerve. By lifting this organ you also draw upon the sub-lingual gland, in which the sub-lingual branch is superficially imbedded, and this can easily be injured. The incision on the side is not altogether void of danger of wounding the lingual artery and nerve, especially when it is essential for the assistant to lift and turn the tongue to the opposite side, thus forcing the structures more to the surface. But the incision made parallel to these structures and in the most thickened part of the edematous tissue, the danger is greatly minimized.

The following case will illustrate the subject, and is of interest:

Male, married, twenty-nine. Had mastoid operation with cure, six years ago; dysentery, four years ago. In good health since. Had business worries of late, and was in a run-down condition. On October 4th, he woke, having slept with the windows open, complaining of slight sore throat, slight pain in the tongue around the angle of left jaw, neck, ear, and temporal region. On the following day went to see a doctor, who thought it was neuralgia. Went to a wedding on the same night and came back feeling worse. Thought the food did not agree with him and took a large dose of castor oil. The pain in the above regions, especially the ear and left temporal ones, persisted and grew worse.

On October 7th, the symptoms became very pronounced, there was quite a marked glossitis and he was unable to open his mouth. Could not sleep and was given a hypodermic of morphine. On the following day he was given two more hypodermics. On the evening of October 8th, I saw him in consultation with Dr. Charles H. Masten, of Worcester, Mass. The patient showed nervous irritability, characteristic of exhaustion. Looked well in spite of not having eaten or slept for days. He must have been in agonizing pain in spite of the previous doses of morphine, for when questioned as to what was the matter, he pointed to his head. He tried to talk, but speech was inarticulate. He could hardly open his mouth. The submaxillary gland was swollen and tender, there was also edema of the left side of the neck. The tongue was very thick, about three times the normal size, hard, and coated. The tongue depressor produced pitting. Teeth in good condition. The soft palate and the beginning of the anterior pillars could be examined with difficulty

and showed no edema except for the uvula. The structures of the under surface of the tongue were markedly swollen. On palpation with the little finger, it proved tender to the touch with the maximum intensity at a point opposite the second molar tooth. That point was rather harder and thicker than the rest. Temperature, 101.2. Pulse 90. Ether was administered, the patient became cyanotic, artificial respiration with traction upon the tongue had to be resorted to. The operation was performed in a sitting position by reflected light. The tongue was lifted and rolled over to the side, and an incision was made with a straight knife about one-half inch in length, in the most thickened spot, under and parallel to the side of the tongue. The opening was dilated with forceps and about two teaspoonfuls of foul pus were evacuated. A probe was put into the opening about two inches deep and did not show any pockets. A strip of gauze was put in the wound and left there. Cracked ice on tongue ordered.

Dr. Masten informed me that the patient made an uneventful recovery after the pus was evacuated, and the wound closed on the second day after the packing was removed. The infective agent, as suggested by Dr. Masten, must have been the staphylococcus on account of the absence of high fever and the large amount of pus found.

On my second visit, when the throat could be examined satisfactorily, the following interesting point was noticed: The uvula was still swollen and a red streak was running from it along the anterior pillar down to the tongue. The tonsils were not inflamed and the pillars not congested. Whether the primary infection started in the uvula, and from the glands around the uvula was transmitted by the way of the lymphatics along the anterior pillars to the sides of the tongue, or vice versa, the writer is not prepared to say, though it is more reasonable to assume the latter.

I wish to thank Dr. Charles H. Masten, of Worcester, for the information given and for the valuable assistance rendered at the operation.

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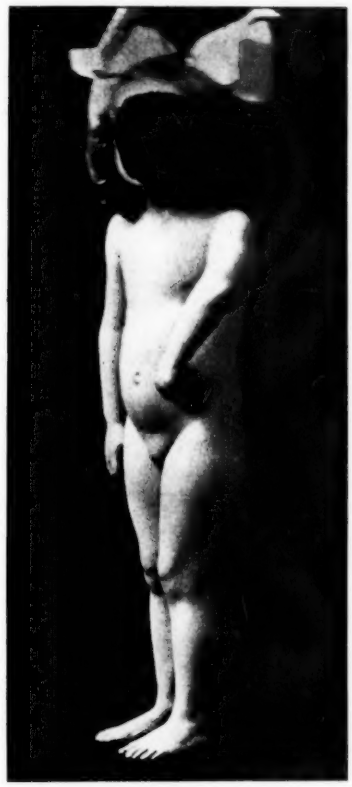
AN OPERATION FOR THE CORRECTION OF THE DEFORMITY DUE TO "OBSTETRICAL PARALYSIS."

BY MARK H. ROGERS, M.D., BOSTON.

THIS case is reported to show the result of an operation which seems to have a very definite place in the correction of the deformity that results from the so-called "birth palsy." Lately there has been considerable discussion as to the exact lesion in these cases, whether the results are due to a tearing of the brachial plexus or whether these may be a congenital dislocation of the shoulder joint. Whatever is the underlying cause and what treatment in the early stages should be employed are not considered in this report. The deformity that results is practically always the same, with the amount of paralysis of individual muscles varying in each case.



Before operation.

The usual deformity that follows brachial paralysis occurring at child-birth is essentially an inward rotation of the whole arm from the shoulder-joint, so that, when the hand lies normally against the side of the body, the elbow is carried away from the body. This is well shown in the first illustration, which was taken before the operation. The elbow-joint is rotated so that the anterior surface points toward the body instead of directly forward.

Without taking into consideration the extent of the paralysis, and we know that it varies to a great extent, the resulting deformity is practically always as described. As the child grows older the deformity becomes more conspicuous, and it is the carrying angle of the elbow that is most prominent. Another result of the deformity is seen when the patient attempts to raise the hand to the mouth. With the direction of the elbow-joint reversed, it is always necessary to raise the arm away from the body to bring the hand up. Also when the patient attempts to use the hand as in picking up any object or in the ordinary handshake, it is necessary first to rotate the whole arm and also to bring the elbow away from the body.

The operation here shown for the correction of the rotation has been in vogue in Germany,

Before operation.

After operation.

and has been described by Vulpius and Lange. The result, as shown by the photographs of the case, is given because the operation is evidently not employed here very often, and it does seem to accomplish a very definite object.

The operation is simply an osteotomy of the upper portion of the humerus about two inches below the shoulder joint, followed by a one-quarter rotation of the whole arm below the line of fracture. An incision is made between the muscle planes sufficiently long to be sure that there is no nerve involvement. A clean cut osteotomy is done, and before the incision is closed the arm is brought out at a right angle to the body and the lower fragment is rotated outward, while traction is kept on the hand. The tip of the finger is held on the fracture to see that there is no overriding and that the position is good. The wound is closed and the arm and body are encased in a shoulder spica with the arm full-length at right angles and the palm of the hand pointing upwards. It is then treated as an ordinary fracture.

The results of the operation are a normal carrying position of the arm, with the elbow at the side, an da normal position of the hand. It is also a striking feature that it is possible to bring the hand to the mouth so that it is possible to use the hand normally while eating.

The only possible danger seems to be the possibility of non-union from poor position of the fragments. This is very slight and may be obviated by the use of a bone-plate if necessary. Three cases form the basis of this report, the photographs of one being shown here, and they have all given good and equal results. It is not an operation to be done in the early steps of the paralysis, but only after the deformity has been developed. It evidently allows a more normal use of the hand and arm, and also corrects a very prominent deformity, which is very noticeable and objectionable.

Medical Progress.

PROGRESS IN PEDIATRICS.

LOBAR PNEUMONIA IN INFANCY AND CHILDHOOD. A SUMMARY OF THE LITERATURE OF THE PAST TEN YEARS.

BY JOHN LOVETT MORSE, A.M., M.D., BOSTON.

(*Concluded from page* 135.)

TREATMENT.

Fresh and Cold Air. Northrup, in a paper read before the Pediatric Section of the New York Academy of Medicine, January 14, 1904, entitled "The Treatment of Bronchopneumonia in Children," called attention to the importance of the hygienic treatment of diseases of the respiratory tract in childhood. He advocated fresh air, a large room with southern exposure and the bed in the middle of the room.

The air should be fresh, cool and flowing. The temperature should be below 65°F. He stated at that time that flowing and fresh mean the same. He emphasized the fact that no one "catches cold" from cold air on the face. It was in this paper that he gave his classical description of how to kill a baby with pneumonia. It is well worth quoting, and is as follows: "Crib in corner of room with canopy over it. Steam kettle; gas stove (leaky tubing). Room at 80°F. Many gas jets burning. Friends in the room, also the pug dog. Chest tightly enveloped in waistcoat poultice. If child's temperature is 105° F., make a poultice thick, hot and tight. Blanket the windows, shut the doors. If these do not do it, give coal-tar antipyretics and wait."

He published a series of papers during the next three years on this same subject, but applying more especially to lobar pneumonia than to bronchopneumonia. From advocating open windows and the bed in the middle of the room, he successively recommended taking out the windows, putting the head of the bed in a bay window with the windows open, and finally putting the patient out of doors. His last paper was published in 1906. In this he stated that he had been treating pneumonia patients in cool, fresh air for more than eleven years, that he had gradually placed their beds nearer and nearer the window, and during the last winter had put them out on the roof. He summarized his results at the Presbyterian Hospital during the preceding winter as follows: The cases most favorably affected by the open-air treatment are those with severe poisoning, with delirium, partial cyanosis or deep stupor. No cases of pneumonia were injured and a few were much aided, possibly saved, by the cold, fresh air treatment. The only regulation is to make the patients comfortable, keeping their feet warm especially. The ears, nose and hands may get cold without harm.

This method of treatment, although it naturally at first met with opposition and some ridicule, was soon adopted, more or less completely, by most pediatricians and by many practitioners. Northrup and Freeman and those working with them have continued to use it, and still advocate it enthusiastically.

No very satisfactory explanation for the supposedly beneficial results of this method of treatment was advanced, however, at first. Patek summed up the prevalent opinion somewhat as follows: "Cold, applied externally, is a respiratory stimulant. Every intensification of the breathing effort means the absorption of an increased amount of oxygen-laden air. Respiration becomes deeper, less frequent and less labored. This stimulation of the respiration brings relief to the over-burdened heart and meets a very important indication in pneumonia." It is noticeable that the emphasis is laid on the coldness of the air rather than on its freshness, which Northrup originally thought most important.

Howland and Hoobler, writing in 1912, state that it is apparent that children, seriously ill with pneumonia, may have a blood pressure somewhat below what might be expected at their age and that the symptoms of the death of children from pneumonia are those of vasomotor failure. They found that the effect of cold, fresh air in patients with active pneumonia was always to produce a rise in blood pressure. Removal to a warm (65° F.±) room produced a fall in blood pressure. The results were absent or much less striking in convalescents. They were unable to get any results by putting children out of doors in warm weather. They concluded, therefore, that the all-important factor in the out-of-door treatment was cold, and that the rise in blood pressure was brought about by reflex stimulation of the vasomotor centre by the action of the cold air on the skin. They also state that there is no doubt that an increase in the blood pressure, when it is abnormally low, which is constant and continuous, and which is brought about without exhaustion or bad effects, is of the greatest value. This explanation of the beneficial effects of the out-door treatment was generally accepted.

About this time, however, Weigert published a paper in which he concluded, on the basis of his own experience and from his study of the literature, that no rule can be established for the blood pressure in pneumonia, and that in consequence blood pressure readings are of no prognostic value. Newburgh and Minot, in 1914, from a study of a considerable number of cases, mostly in adults, found that the systolic pressure in the fatal cases was continuously above the systolic pressure in the persons who recovered. They concluded, therefore, that failure of the peripheral circulation cannot be a common cause of death in pneumonia. Porter and Newburgh have also recently shown experimentally that the vasomotor centre is not impaired in fatal pneumonia in animals. It is evident, therefore, that whatever systemic and beneficial action cold air may have in pneumonia, it is not through its action on the vasomotor system.

There is no doubt that children with pneumonia are more comfortable when the air is fresh and cold than when it is dead and warm. It is very doubtful, however, whether the mortality of lobar pneumonia in childhood has been lowered materially, if at all, by the cold air treatment. The statistics at present available are certainly entirely insufficient to show what influence it may have upon the mortality. Northrup himself has called attention to the difficulties in the way of drawing conclusions as to the effect of this treatment on the mortality, in view of the fact that 90% or more of children with pneumonia recover under any and all forms of treatment and that "even the worst treatment seldom kills them." Lowenburg ex-

presses the opinion of many when he says that his "experience with cold, fresh air has been satisfactory, but he cannot truthfully say that recovery in each instance would not have taken place had it not been used."

Chapin, in a recent paper, states that in his experience feeble infants ill with pneumonia do not do well when the windows are wide open day and night in winter. His aim is to have a steady supply of fresh outside air delivered into a ward that has been moderately warmed. He finds that this is the most satisfactory treatment.

Leucocytic Extracts. Hiss and Zinsser brought out their treatments of infections with leucocytic extracts in 1908. They argued that digestive, poison-neutralizing and complementary substances might be liberated from leucocytes by methods of extraction which, when injected into infected individuals, might act not only by protecting the flagging leucocytes and permitting them to recuperate, but also serve as a shield for the more specialized cells. They first experimented with animals infected with various organisms, such as pneumococci, and obtained favorable results. They were unable to determine the exact action of the extracted substance, but concluded that it was probably one active in neutralizing poisons—an anti-endotoxin or an endo-antitoxin. Fresh, living leucocytes had no action. Among others they treated seven adults, ill with lobar pneumonia. They used aqueous extractions of rabbit leucocytes, administered subcutaneously. The leucocytes were obtained by pleural inoculations of aleuronat. The fluid was quickly centrifugalized and the serum decanted. The leucocytes were then washed in normal sodium chloride solution, emulsified in distilled water, allowed to stand for a few hours at 37.5° F., and then at icebox temperature until used. The clear supernatant fluid was ordinarily alone used. The usual dose was 10 c.c., repeated once or twice daily. There was a drop in the temperature after each injection, and an apparent improvement in the general condition. The duration was apparently shortened in one case. They note that the number of their cases was too few to form the basis for a true opinion as to the value of the treatment, also that pneumonia naturally terminates by crisis and is of irregular duration. Their impression was, however, that further clinical tests might not unlikely prove it to be of definite therapeutic value.

Floyd and Lucas, in 1909, treated 41 cases of pneumonia with leucocytic extracts prepared in this way. Twelve of these patients were between two and one-half and fourteen years of age. Pneumococci were found in the sputum of all of them. They state that constitutionally the patients felt better soon after an injection and that the symptoms of toxemia were relieved. Five of the patients died, giving a mortality of 12.2%. Two of these were children with bronchopneumonia. Complications appeared in only two cases. The mortality at the time in untreated cases was about 25%. The course of the disease was apparently shortened in a number of instances. The signs in the lungs increased in some patients; in others resolution was apparently hastened.

Reynolds, in 1914, used this method of treatment in nine cases with no deaths. Four of his cases were in children between two and seven years of age. He believes that this method of treatment modifies the temperature curve, diminishes the toxic symptoms and albuminuria, but does not shorten the course of the disease or prevent extension of the process in the lungs. He believes that it lowers the mortality remarkably. The good effects of the treatment are, however, not evident from his description of the cases.

Vaccines. The treatment of pneumonia with vaccines has come up during this period. Many papers have been written about it, but very few of them deal with children. A considerable proportion of them have been published in trade journals, and most of them show evident bias or are based on incomplete and unreliable observations. The paucity of reliable data on the effect of the vaccine treatment is most striking, when the immense amount of advertising which it has received and the probable extent to which it has been used are taken into consideration.

One of the earliest papers on this subject was by Leary, who reported a series of cases in adults treated with a stock vaccine. His results were most encouraging. He claimed that there was either none or a very fleeting negative phase in pneumonia and that there was, therefore, no danger of doing any harm by the treatment. He stated that a combined investigation was to be undertaken, and the literature of the next two or three years contains many references to it. We have never seen any report of the results of this investigation, however, although Leary's paper was published in 1909.

Charteris treated 19 cases with a polyvalent stock vaccine. Six of these patients were children. His results in these cases were as follows: (1) 9 years old. Crisis on fourth day, soon after injection. (2) 14 years old. Crisis on fifth day, 48 hours after injection. (3) 5¾ years old. Three injections on fifth, seventh and eighth days. Crisis on ninth day. (4) Boy, injection on third day Falling temperature for 36 hours. Hectic temperature, and empyema on seventh day. (5) Boy. Injection on third day. Crisis in 12 hours. (6) 10 years old. Injection on sixth day. Pseudocrisis in 12 hours. Crisis on eighth day. He concluded from the study of all his cases that the treatment had no marked effect on the subsequent course of the disease. The mortality was slightly higher than in the controls—21% : 20%. The early administration of the vaccine did not abort the disease, nor prevent complications. Complications were relatively frequent in the vaccine series.

Raw used a stock pneumococcus vaccine in 207 cases. Thirty-four died, giving a mortality of 16%. Thirty of his patients were between

one and ten years of age. Two died, giving a mortality of 6.6%. He concluded that the vaccine always reduces the pulse rate, but that it does not hasten the crisis. He states that it is very difficult to estimate the value of the treatment, because of the number of other factors which have to be taken into consideration. He believes that vaccines are a valuable aid, but not a specific remedy.

A statement in the *Journal of the American Medical Association*, in 1913, in answer to a query, sums up the situation very well: "The vaccine treatment of pneumococcic infections is still on trial. So far there is little evidence of its efficiency. There is little evidence that stock or autogenous vaccines are of value in pneumococcic infections. R. W. Allen (Bacterial Diseases of Respiration) gives statistics from various sources, most of which are favorable, but the numbers of cases are so small that no reliable conclusion can be drawn from them. Schorer (Vaccine and Serum Therapy) says active immunization will probably never be of great value in the majority of cases of lobar pneumonia due to pneumococci, because the crisis comes on about the time the results can be expected from the vaccination."

Rosenow has written a series of papers on the treatment of pneumococcal infections with partly autolyzed pneumococci. In connection with Hektoen he treated a series of cases of pneumonia in adults in this way. They reported favorable results. This method, so far as we know, has not been used in children.

Serum Treatment. Römer's serum, which is a polyvalent serum, was being used in Germany to a considerable extent at the beginning of this period. Most of the work, however, was done on adults. Lindenstein treated four cases in all. One of these was in a child of 5 years. The serum was given on the second day; the crisis occurred on the seventh day and the child recovered. He thinks that the subjective symptoms were markedly improved, and recommends the use of the serum highly.

Krische treated five children, varying in age between nine months and ten years. All recovered. He claims that there was improvement in the subjective symptoms, a fall in the temperature and pulse, and hastened resolution after the injections. Analysis of his cases shows, however, that in one instance four lobes were involved in succession in spite of frequent doses of the serum. There was, moreover, no evident shortening of the course of the disease in the others, with one possible exception. In this, however, the duration of the disease before the beginning of treatment is not given.

Monti used the serum in twelve children whose ages varied between thirteen months and nine years. There was a fall of temperature, and resolution began in all cases from two to four days after the beginning of the treatment. Repeated injections were given. He states that there was improvement in the general condition and dyspnea in all. No complications occurred, and all recovered. Brüning criticises Monti's paper, however, because he does not distinguish between the day of the disease and the day of the beginning of observation. He states that it is not plain that the crises were not due to the natural course of the disease rather than to the injections.

Crux treated twelve cases, aged between nine months and twelve years. All recovered without complications. He concluded that Römer's serum had an extraordinarily favorable, almost sovereign, action; that it was not dangerous, if the heart was sound; that there was a striking improvement in the general condition after the injections, with a fall of temperature and signs of resolution in the lungs. Brüning criticises his report by saying that repeated injections were necessary, and that in one case recovery did not occur until fourteen days after the beginning of the injections. Further criticisms may be made that the day of the disease is not given in many instances, and that it is therefore impossible to know whether the improvement was due to the serum or not.

Brüning used Römer's serum in six cases, varying in age from eight months to nine years. His results do not confirm the claims made by Crux and Monti. He observed no effect on the pathological condition in the lungs or on the general condition, either subjectively or objectively. He calls attention to the possible danger of the use of foreign serum and of strain on the right heart.

Sill used a polyvalent serum in twelve children, aged between five months and three years, giving one or more injections. All but two were under two years. There were two deaths, one of empyema and one of pneumonia, cardiac failure and marasmus, giving a death rate of 16.6%. Two others were not improved, eight were helped. In some the favorable effect was marked.

Freeman, in 1912, used the serum of the New York Board of Health, which is a polyvalent serum, in fifteen children, whose ages varied between two months and three and one-quarter years. Alternate cases were used as controls. Seven children were given simple pneumococcus serum, receiving 100 c.c. or more, subcutaneously. Eight were given 50 c.c. of pneumococcus serum and 50 c.c. of streptococcus serum at each dose. The mortality in the injected cases was 40% and in the controls 47%. Freeman concluded that the serum apparently affected the course of the disease favorably in some cases, but that it had no effect in others. In most cases there was a better reaction after than before the injections. There was usually a reduction in the number of leucocytes and in the percentage of the polynuclear neutrophiles. The injected patients who lived had a much shorter average course than the controls. In some instances the process in the lungs spread, in others it stopped or quickly cleared up. He considers it a safe method of treatment. He thinks that

there is no advantage in the addition of the antistreptococcus serum.

Williams, in 1914, treated twenty-three cases with the serum derived from horses injected with many strains of pneumococci. No attempt was made to determine the strain of organism in the individual case. Six of his patients were children, two of whom died, giving a mortality of 33%. He concludes that the serum has no constant effect on the white cells, and that the study of the results leaves one doubtful of the influence of the serum in modifying favorably the course of the pneumonia.

Dochez and Gillespie, working at the Rockefeller Institute, have divided the pneumococci, by means of immunity reactions, into four main classes, which they term Types I, II and III, and Group IV. Dochez and Avery continued the work of Dochez and Gillespie and found that the pneumococci of the first three types were never present in normal mouths, but that pneumococci of Group IV were present in 80% of normal mouths. Pneumococci of Types I, II and III may, however, be present in the mouths of persons exposed to patients with pneumonia. Organisms of these types disappear in a few weeks after the crisis in pneumonia, and are replaced by the organisms of Group IV. The severest forms of pneumonia result from Types II and III. The average virulence of Type I is lower, while the virulence of Group IV is much lower, and death from it is unusual. Infection in pneumonia is not autogenic from the mouth.

Cole, working at the Rockefeller Institute, found that organisms of Type I were present in 38% of his cases of pneumonia and that the mortality in this series was 25%. Type II was present in 30%, and the mortality was 36%. Type III (mucosus) was present in 11%, and the mortality was 47%. Group IV (heterogenous) were present in 21%, and the mortality was 6%. The mortality in the Pennsylvania Hospital with Type I was 29%; Type II, 27%; Type III, 67%; Group IV, 11%.

These types of organisms seem to be distinct. The serum to be of use, therefore, must be the result of immunization with the organism of the same type. This may be the reason why the results from the serum treatment have been so poor in the past. Serums have been produced by the injection of living organisms of Types I and II into horses which have a high protective power against Types I and II. It has been impossible to produce a serum with any protective power against Type III. Active immune serum can be produced for Group IV, but must be against the individual race of organism. A method has been developed for determining the type of organism from the sputum, or lung puncture, in a few hours. The serum has been used intravenously in large doses, 80 or 90 c.c., twice daily. The results thus far in small series of cases in adults have been encouraging. No children have been treated.

Dunn has found in some investigations, not yet published, that the organisms present in pneumonia in infants belong almost entirely to Group IV. A possible explanation of the frequency of organisms of Group IV is the slight resistance of babies to infection. It is possible that the low mortality of pneumonia in children may be due to their slighter resistance to infection than adults and consequently more frequent infection with organisms belonging to Group IV, the virulence of the organisms of this group being less than that of the other types.

Other Methods of Treatment. Nothing very new has come up about other methods of treatment in pneumonia in children during this period, unless possibly the treatment with quinine. There is very little about this in relation to children, however, in the literature.

Kilmer, in a paper entitled "The Ambulatory Treatment of Pneumonia in Infants and Young Children," states that there is no objection whatever to bringing children to out-patient departments for treatment daily or every other day, no matter what the weather, and gives statistics of cases treated in the out-patient department in whom the mortality was very low.

Chapin states that in order to reduce the mortality of pneumonia in infancy the patients should be admitted to hospitals earlier and should be discharged promptly, as soon as resolution has taken place. He states that, if they are kept too long, there is constant danger of relapses and reinfection. His plan is to remove infants from the hospital as soon as the acute symptoms have subsided and to board them out in private homes under competent supervision.

Finally, Baginsky, in a paper published this year, calls attention to the strong natural resistance of children to infection. He shows how well they do without any treatment except food and hygiene. He warns young doctors against too vigorous treatment, shows the dangers of doing too much, and closes with the admonition, "*Nil nocere.*"

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Reports of Societies.

BOSTON SURGICAL SOCIETY (INCORPORATED).

MEETING No. 5.

A SPECIAL meeting of the Society was arranged for Wednesday, April 21, 1915, at the Massachusetts General Hospital.

Dr. J. F. Percy of Galesburg, Illinois, demonstrated to the Society the use of his cautery in the treatment of cancer by low heat.

Dr. Percy's paper was published in the BOSTON MEDICAL AND SURGICAL JOURNAL, July 15, 1915.

(Signed) ROBERT B. GREENOUGH, *Secretary.*

MEETING No. 6.

A stated meeting of the Society was held on Monday, October 4, 1915, at the Carney Hospital, as a clinical meeting.

Dr. Bottomley operated for gall-stones and acute cholecystitis, and performed a cholecystectomy.

Dr. Rushmore (by invitation) operated for fibromyoma of the uterus, and performed a complete hysterectomy.

Dr. MacAusland (by invitation) operated for ankylosis of the elbow joint, by division of the olecranon and the transplantation of a fascial flap from the thigh.

Dr. Rushmore (by invitation) operated for ovarian cyst and multiple fibro-myomata. He removed the cyst and performed a myomectomy.

Dr. Bottomley demonstrated a case referred for sarcoma of the jaw, which on investigation proved to be actinomycosis, and a mutilating operation was thus avoided.

Dr. Bottomley and Dr. MacAusland (by invitation) then demonstrated a very interesting series of chronic and sub-acute cases of arthritis, which had been previously operated upon with more or less success by ileo-colostomy.

Dr. MacAusland (by invitation) also demonstrated other cases of arthroplasty of the elbow joint, with extremely satisfactory results.

(Signed) ROBERT B. GREENOUGH, *Secretary.*

MEETING No. 7.

A stated meeting was held on Monday, November 1, 1915, at the Boston Medical Library, at 8.20 p.m.

The first paper of the evening was read by Dr. Beth Vincent on Gun-shot Wounds.*

Dr. C. C. Simmons read a paper on Gun-shot Fractures.†

Dr. E. C. Cutler (by invitation) read a paper on Neurological Surgery in a War Hospital.†

Dr. Walter J. Dodd (by invitation) read a paper on Military X-ray Work.†

Dr. Walter M. Boothby (by invitation) read a paper on Gun-shot Wounds of the Chest.†

Dr. Orville F. Rogers, Jr., and Dr. George Benet (by invitation) read a paper on Bacteriology of a War Hospital.†

(Signed) ROBERT B. GREENOUGH, *Secretary.*

AMERICAN ASSOCIATION OF IMMUNOLOGISTS.

STATED MEETING, HELD MAY 10, 1915.

(*Concluded from page* 136.)

The President, DR. GERALD B. WEBB, Colorado Springs, Colo., in the Chair.

The Second Annual Meeting of this Association was held at the New Willard Hotel, Washington, D. C. After the meeting of the Council the scientific program was taken up.

THE BLIND DENTAL ABSCESS.

DR. HARRY L. ULRICH of Minneapolis read this paper, which he prefaced by stating that blind dental abscess was rather a loose term though the other names thus far suggested, such as alveolar abscess, peridental or better still, apical abscess, were not very satisfactory. Apical abscesses were never found at the roots of vital teeth. The pathological anatomy of these areas was not very well understood. The skiagraph indicated a range from a rarifying infiltration to a well defined area of bony necrosis. Extraction of these teeth showed root necrosis and absorption. Microscopic section of these so-called pus sacs showed an outer dense area of connective tissue with infiltrating areas of round cells made up of plasma cells and lymphocytes. Various stages of acute and chronic inflammatory processes were shown. Besides round cell infiltration, polymorphic types were noted. Sections stained for bacteria proved unsuccessful.

At the University of Minnesota Hospital, in an effort to incorporate oral sepsis with sepsis with systemic lesions, special inspection of mouths was made for pyorrhea, gingivitis, caries, and, by means of the x-ray, for apical abscesses. They were struck by the frequency of apical abscesses by studying the roentgenograms of the mouth in a medical x-ray laboratory. The findings were startling. A little over 68% of all artificially devitalized teeth were found with apical abscesses and a total number of abscesses, including those found in pulpless teeth due to caries or death from accident or too proximal fillings, was 83%. In the examination of 500 cases, 1350 dead teeth were found and of these 976 had root canal fillings. Of these cases, 59 with the apical abscess had had bacteriological review and of 107 cases from the university clinic, 100 gave a streptococcus viridans. Fifty-two were from the author's private clinic, and 50 of these gave a viri-

* See JOURNAL, page 153.
† To appear in later issues of the JOURNAL.

dans or a hemolyticus, occasionally mucosa was discovered. Thus 150 of these 500 cases gave evidence of streptococcus, either in pure culture or as the dominant organism. Occasionally the staphylococcus aureus, or albus, or micrococcus catarrhalis was also observed in conjunction with the streptococcus. To the writer the apical abscess was merely another evidence of a focus of streptococcal focal disease, just as the heart, the mucosa of the stomach, the articulations, or the kidneys were evidence of secondary deposits. In other words it was hematogenous in origin. The pathogenicity of these abscesses and their relation to other recurrent foci had had ample clinical verification: First, because acute exacerbation of systemic symptoms followed their removal, that is, focal reactions occurred due to autoinoculation at the time of their reduction; second, acute new systemic systems had followed reduction of these areas; in other words, other foci had been established; third, improvement and sometimes total recession of other focal areas followed the extirpation of these sites; fourth, local and focal reactions occurred with vaccines prepared from apical areas. A recent analysis of 76 cases in which a pseudostreptococcus was isolated from apical pockets showed that 38 cases belonged to the rheumatoid group; six cases to the cardio-vascular group; three to the asthenic, four to the gastro-intestinal, two to the genito-urinary allied to the rheumatoid group. A subgroup of eight cases consisted of those in which the streptococcus focal infection was superimposed on syphilis, tuberculosis, primary anemia, or vice versa. The striking feature of this analysis was the diversity of clinical manifestation for which streptococcus focal infection was responsible. The diversity of symptoms was so marked that he had suggested the term "steptococcicosis" for streptococcal focal disease. Experience with alveolar infection in which systemic symptoms were present had made them very cautious concerning the apparently innocent looking tonsil. Invariably the same tonsil, on closer inspection, and particularly after it had been removed under protest, had proven their suspicions correct. To those that were attempting active immunization to disease, it might be the only focus left and might hold the balance of power in the struggle of the body for complete sterilization. In every case of streptococcal focal infection its presence or absence must be established. Such a focus would furnish a material for the preparation of vaccines and much trouble and disappointment from attempting culture from glands and tonsils could thus be avoided.

Of the more striking symptoms in these groups they had manifestations of rheumatoid conditions in 51%; secondary anemia, 43%; heart lesions 47%; tonsils, 40%; pyorrhea, 25%; kidneys (albuminuria and nephritis), 34%; caries, 15.8%.

DR. GEORGE P. SANBORN, Boston, Mass.: In cases of rheumatism or joint infections, I believe it is up to us to find some local infection which is the cause of the trouble. There are many cases met with, however, where it is impossible from the clinical history alone to tell just where the local infection is, and in such cases the use of the x-ray is of great value. I also wish to emphasize the great importance of having men examine the throats, a man who is up-to-date and experienced in his work. I wish to report an interesting case of a chauffeur who, every two or three months, after being exposed to cold weather while driving the automobile, suffered with chills, high fever, and other symptoms which after a short time disappeared. In looking carefully in the throat nothing could be noted which might be attributed as a cause of his disturbance. A casual examination of the tonsils was made but nothing noted. However, with the use of a tongue depressor, pus was expressed from the side of the tonsil. A tonsillectomy was done and he was then relieved of his rheumatic attacks. It is interesting to note that there may be these foci of infection present and yet give no clinical symptoms.

DR. JUDSON DALAND, Philadelphia, Penn.: I wish to say a word regarding the occurrence of tonsillar infection without any clinical evidences of such a condition being present. Many of us have met with cases where the pus foci were deep in the tissues. In many cases, even after the tonsils were removed, the symptoms will persist and, after very careful search, there would be found a post-tonsillar abscess which they had not been able to find. There seems to be a large number of such cases.

DR. JOSEPH HEAD, Philadelphia, Penn.: I can recall a case where the condition of the tonsil appeared to be all right; the tonsils, however, were removed and yet the joint affection persisted. It then occurred to me that the use of the x-ray might reveal some foci of pus around the roots of the teeth which might account for the symptoms complained of, certain deposits of pus around the roots of the teeth. Was it the tonsil that caused the trouble? I do not wish to have you think that in any way I discredit the value of the paper just read.

DR. CLAUD P. BROWN, Glenolden, Penn.: After doing tonsillectomies there have been left myriads of bacteria, many of a pathogenic nature. After searing the cut parts, inoculation was done; guinea pigs were injected with 2 c.c. of an emulsion and every one so injected died. This seems to prove that the tonsils and the peritonsillar tissues were undoubtedly the habitant of bacterial flora.

DR. A. PARKER HITCHENS, Toledo, Ohio: I wish to relate a personal experience. I suffered from pyorrhea alveolaris with an occasional "blow up." I also had a severe tonsillitis which I treated with nitrate of silver, sprays, and so forth. An interesting thing was that the tonsillitis always came along when I had an acute exacerbation of the pyorrhea alveolaris. Since the Riggs' disease has been cured by the extraction of certain teeth, I have not since been troubled with tonsillitis.

DR. GERALD B. WEBB, Colorado Springs, Colo.: I would like to ask Dr. Ulrich if the use of the x-ray will enable us to make a diagnosis of pus foci in the apical portion of the teeth.

DR. HENRY L. ULRICH, Minneapolis, Minn.: In closing the discussion I should like to show some pictures which I think are quite characteristic of what I have been speaking of.

With regard to the x-ray interpretation, this is a matter about which we are still at sea; we do not care to extract teeth in order to find out the cause of trouble, but when we have done so we have found pathogenic bacteria. As a matter of fact, after extracting teeth because of abscess formation, and when we have made sections, we did not always find necrosis but the results of ordinary inflammatory conditions. Histologically we have not yet worked out this subject to our satisfaction. There is nothing to be found of value in the literature of this subject. It is of particular interest to know that these abscesses were found so frequently and I believe that many must be secondary and not a primary infection.

THERAPEUTIC INOCULATION IN A GENERAL HOSPITAL; PERSONAL EXPERIENCE COVERING SEVEN YEARS.

DR. GEORGE P. SANBORN of Boston, Mass., presented this paper. He declared that among the most important problems of the present day in connection with specific treatment of infectious disease in general hospitals was the development of an organization to carry on this important work. That these cases could be treated at present successfully, efficiently, and economically in the various departments in which they occurred was out of the question. The writer said that since his return from the Wright Clinic in 1908 he had made it his chief work to organize a department in the Boston City Hospital which should receive from the various already organized departments suitable cases for active immunization; in order that they might be grouped and thus receive the careful treatment they deserve. It was felt that present and future developments in the specific treatment of infectious diseases would yield a sufficiency of interest and required a sufficient amount of specific detailed laboratory and clinical work to engage the exclusive attention of the department designated for the purpose. At the start in 1908 the activities of this department were limited largely to the out-patient clinic, with the idea of furnishing the greatest good to the greatest number. In connection with the work of others in the same direction it has been the writer's hope to bring forward a sufficient volume of scientific data as to the methods of treatment and as to end results to make possible a more definite standardization of method of vaccine therapy, and a more general acceptance of its efficacy in the treatment of some of the acute, but chiefly the subacute and chronic localized infections. The paper was not intended as an analysis of the cases treated, but to show the amount, character, and scope of the work which was being done with the above end in view. The work of the department included curative vaccine inoculations, prophylactic inoculations against typhoid, salvarsan chemo-therapy and later chemoserum therapy for nerve syphilis. The following data summarized the routine work of the last few years. During this time curative vaccine inoculation had been practised in 994 cases. These patients visited the clinic 6697 times and had received 5880 bacterial vaccine inoculations. As a basis for their treatment more than 650 cultures had been examined, and over 600 vaccines had been prepared. The type and number of cases treated was as follows: Acne, 161 cases; furunculosis, 369 cases; carbuncle, 39 cases; gonorrheal arthritis, 101 cases; tuberculous adenitis 162 cases; other cases of local tuberculosis, 37 cases; superficial pyogenic infections, 49 cases. These conditions had furnished about 75% of all the cases treated. Excepting in tuberculosis and gonorrheal arthritis, it has been the rule to prepare autogenous vaccines for every patient in which proper cultures could be obtained, and this had added greatly to the amount of laboratory work. The results had justified the extra labor. It has been possible to shorten the course of treatment compared to that of 1912 in at least 70% of all cases, the average number of visits per person having dropped from 10.8 visits to 6.7 in 1913 and 1914. It was believed that the regular attendance at the clinic showed the satisfaction of the patients with the treatment and the results. Anti-typhoid inoculation had been applied since June, 1911, to a total of 535 individuals, mostly nurses. Since the introduction of the anti-typhoid inoculation no nurse had developed typhoid fever in the hospital though there had been two cases developed more than two years after protective inoculation had been given. It was their custom to repeat the inoculation after two years. In the division of chemo-therapy 327 cases of syphilis had been treated. These had visited the clinic 3589 times and had received 954 doses of salvarsan and 608 intramuscular injections of salicylate of mercury. There had been 866 blood specimens taken for Wassermann test, 57 lumbar punctures made for diagnostic purposes and numerous salvarsan injections were given also for diagnosis. The laboratory work had involved the preparation of 954 doses of salvarsan and the solutions necessary for their preparation, and the examination of 57 spinal fluids to determine the question of syphilitic involvement of the nervous system. The cases of syphilis had been mostly in the tertiary stage, in which the requirements were elaborate and had been thoroughly met. The most important aspect of this work had been the early detection of nerve syphilis. Unless intravenous salvarsan of itself might prove to be efficient in the prevention of nerve syphilis, it was reasonable to suppose that in the natural course of events as large if not a larger percentage of cases would be candidates for nerve syphilis unless further preventive measures were applied. This had led to a systematic study of all cases of tertiary syphilis with the possibility of nerve syphilis in mind. It had been the rule to perform lumbar puncture at the beginning of the treatment if consent could be obtained, in order that the spinal fluid could be tested for syphilitic abnormalities. These patients had also been referred to the nerve department for detection of the earliest nerve symptoms. Through the coöperation of the x-ray department, study was being carried on in regard to the involvement of bones and great vessels in the teritary syphilis. In the treatment of primary and secondary syphilis no reliance had been placed on single doses of salvarsan: the results of following this principle had been most satisfactory. There had been no deaths and no untoward happenings due to the administration of salvarsan. In the treatment of tertiary syphilis in the presence of nerve involvement, the experience of the writer corroborated that of Swift and Ellis and others, in showing this method to be efficient in producing clinical improvement in eliminating in varying degree conditions in the spinal fluid pathognomonic of syphilis. During the past two years the author had treated 150 cases of nerve syphilis to whom had been given 870 injections of salvarsanized serum according to the method of Swift and Ellis. In the hospital clinic 81 cases had been given 348 injections. In summing up, Dr. Sanborn emphasized the advantage of this laboratory whose final interest was special therapy and the advantages of the interrelation of clinic and laboratory, and recommended the establishment of similar departments in all large general hospitals.

THE WOMEN'S MUNICIPAL LEAGUE of Boston is holding this week an exhibit of the different departments of its work in the exhibit room of the Jordan Marsh Company. Education, food sanitation, housing, public health, streets and alleys and the Junior Leagues are represented.

Harvard Medical School.

CHRONIC ULCER OF THE DUODENUM AND STOMACH. DIAGNOSIS AND SURGICAL TREATMENT.*

By chronic ulcer of the duodenum and stomach is understood a loss of substance involving the mucosa, sometimes the muscularis and sometimes the peritoneum. In the immediate neighborhood of this loss of substance there is an indurated area of greater or less extent, depending upon a round celled infiltration. This round celled infiltration serves as a splint to the part, but is one of the factors delaying healing. Because of this delay in repair an increase in the size of the ulcer often takes place and an extension in depth, so that hemorrhage may occur from the involvement of blood vessels in the destructive process. Perforation may take place slowly or extremely rapidly and suddenly.

Chronic ulcer of the stomach and duodenum, then, is characterized by a delay in healing, a tendency to perforate and a tendency to the involvement of large blood vessels, causing serious hemorrhage. In addition to these characteristics, there is the terminal condition of cicatricial contraction, causing deformity of the part, and the still more remote possibility of the development on the ulcer wall of true carcinoma.

Regarding the treatment of such chronic ulcers, there is no doubt that some chronic ulcers of this type may have been cured by medical treatment, but they probably are few. It is difficult for an internist to prove that any ulcer that he thinks he has been treating successfully has completely healed in the first instance, and in the second instance that it was actually a chronic ulcer as defined in the terms above.

The surgeon at the operating table sees results after the ideal medical treatment of these ulcers which do not show the ulcers to be healed under medical treatment.

The diagnosis of chronic ulcer is not difficult in the clear cases. In the doubtful cases the diagnosis may be most difficult. The chief obstacle to diagnosis is the disentangling of the symptoms occasioned by complications consequent upon the involvement of the gall-bladder or the pancreas. Other difficulties lie in the actual presence of adherent organs in the upper right quadrant, or the coincident existence of a chronic appendicitis or pancreatitis. The diagnosis becomes less difficult as the interpretation of the individual symptoms is more and more intelligently made. For example, instead of regarding continual bleeding into the intestine as a sign of cancer only in these gastric cases, we now know that about 5% of chronic ulcers bleed continually. This fact must be taken into consideration in estimating the differential diagnosis of chronic ulcer and malignant disease.

(The obtaining of the diagnosis in chronic ulcer was then dwelt upon, the important points being the clinical story, the tube findings, the x-ray examination, the blood tests, and the examination of the stool.)

The treatment of chronic gastric ulcer is ordinarily surgical. Chronic ulcer of the duodenum is best treated by posterior gastroenterostomy and a moderate infolding of the peritoneum over the duodenal ulcer. Gastric ulcer is best treated by removal of the ulcer and, if possible, the region of the stomach in the vicinity of the ulcer to the extent of a partial gastrectomy.

(The effect of gastroenterostomy upon gastric ulcer was related. The wisdom of the treatment of gastric ulcer by the actual cautery, when not possible to excise it, was commented upon.

It was stated that in the small percentage of cases of chronic ulcer, either of the duodenum or of the stomach, treated surgically, which were not cured of all symptoms, such cases must be carefully studied individually before adverse criticism of surgical treatment can be made. That is, in a case of chronic ulcer which post-operatively has certain symptoms, it must be determined what the occasion of these symptoms is in so far as possible, as such symptoms may be due to one or more of many things such as: 1. Post-operative adhesions. 2. A gastro-jejunal ulcer in the stoma. 3. A new ulcer in the stomach or duodenum. 4. A reinfection of an old ulcer. 5. A chronic cholecystitis, with or without gall-stones, overlooked at the time of the operation. 6. A chronic appendicitis. 7. A chronic pancreatitis.)

The surgical treatment of chronic ulcer has been a series of brilliantly successful results. Surgical treatment is not to be chosen as the procedure in supposed cases of chronic ulcer until there is well-established proof that chronic ulcer does exist, and until carefully tried medical treatment has failed to remove the symptoms permanently.

DR. H. F. HEWES: Among the disorders of the stomach which we meet with in clinical practice, we have two distinct groups of cases.

1. Conditions of disorder associated with actual disease of the stomach itself.

2. Conditions of disorder of the stomach appearing as disturbance of the stomach functions, or giving symptoms attributed to the stomach, which are manifestations of actual disease elsewhere, as gall-bladder trouble, appendix trouble, heart trouble, tuberculosis, etc.

In the first group we may consider the following entities: Cancer of the esophagus or stomach, ulcer of the stomach, acute and chronic gastritis, simple hyperacidity, adhesions involving the stomach or affecting its function, debilitated stomach, such as is seen with or after exhausting disease, as typhoid, influenza, etc., misused stomachs associated with improper hygiene, nervous dyspepsia, and rare conditions of malformation of the organ, or syphilis of the stomach, or sarcoma.

In all cases the first step in diagnosis is the determination, as far as possible, as to whether or not we are dealing with a real stomach disease, primary in the stomach, or with a disorder which is simply a sign of disease elsewhere. Often the record of the case or the results of general physical examination will enlighten us on this point, discovering the existence of appendix trouble, or pulmonary tuberculosis, or cerebral arteriosclerosis.

Once we have ruled out probable trouble elsewhere, we settle ourselves to determine which of the above stomach entities we are dealing with, using the records of history, physical examination, special tube examination, feces examination, or x-ray examination to aid in our research.

The following is a brief summary of the usual symptomatologies found associated with these various definite stomach disorders. (This summary

* Abstract of lectures at Harvard Medical School, Jan. 14, 1916.

appeared in the article by Dr. Hewes on "A Study of Disturbances of the Stomach," published in the JOURNAL, Vol. clxxii, pp. 286, 338, 370, 406.)

In regard to the treatment of cancer of the stomach, all that we can say is that surgery should be employed wherever it seems possible that it will do any good. Some cases we may get at a comparatively early stage, and accomplish a cure by partial gastrectomy. In other cases our treatment may be only palliative, but it will add much to the comfort of the patient.

The treatment of bleeding ulcer of the stomach should be medical in the first instance. It should consist of the employment of a simple diet, given in small amounts at frequent intervals. It matters little whether we employ the diet used here, of crackers and milk, or that used so much in Europe, of egg white and milk, or the diet of milk and cream. Beginning with 1 to 2 ounces every hour, we finally get to 6 to 8 ounces every two to three hours. Later we add mashed potato, macaroni, custard, ice cream, cereals, soft toast, eggs. Bicarbonate of soda or a mixture of bismuth and soda may be given. In convalescence I give paraffin oil regularly. Care about diet and in regard to proper hygiene should be continued for months in these cases. The same treatment is to be utilized in cases of fresh duodenal ulcer.

In chronic ulcer of the stomach the treatment is surgery, and the proper surgery is resection, with gastro-enterostomy. Some of these conditions develop cancer later, and it seems the best judgment always to remove the lesion rather than to temporize with it.

In the treatment of chronic duodenal ulcer, I advise medical methods in some cases and surgical procedure in others. There can be no fixed rule for the selection of treatment in the various cases.

As a rule, surgery is to be advised in all cases where there is evidence of obstruction, either marked obstruction, as evidenced by the finding of a twelve-hour food residue, or moderate obstruction, as evidenced by the finding of a six-hour bismuth stasis of any amount. Cases of ulcer with no bismuth stasis, I subject to medical treatment in the first instance. Many cases of this type do quite as well under medical treatment as the average case does under surgical treatment. Where comfort cannot be secured by medical treatment, surgery can finally be employed.

The medical treatment employed consists of the use of a mild diet, consisting of soft-boiled eggs, toast, wheat cereals, milk, potato, macaroni, rice, simple puddings, potato, pea or bean purée, crackers and milk. Five or six meals daily should be given. In addition give paraffin oil, and if necessary, bismuth and soda.

The treatment of adhesions involving the stomach varies with the case. Often we secure good results by the employment of the same medical treatment just described in the consideration of chronic duodenal ulcer. In other cases we are forced to resort to surgery. If surgery is used in these cases it should be radical, including gastroenterostomy or short-circuiting, not, as a rule, simply the separation of adhesions.

The treatment of hyperacidity and of chronic gastritis will be considered at another exercise.

In addition to these above mentioned actual diseases of the stomach, we have to deal with some other conditions not actually those of stomach disease but of functional disturbance of the stomach, notably conditions of debilitated stomach and of nervous dyspepsia.

Debilitated Stomach. In patients who are run down or overworked, or patients suffering from diseases which lower vital force, as typhoid, influenza, tuberculosis, we often have what can best be described as weakness of the stomach,—inability to take care of regular diet without symptoms of distress or discomfort. There is no regular symptomatology in these cases. Sometimes there is a sense of heaviness in the stomach soon after eating, with a tendency to feel distended and to raise gas. Sometimes the discomfort comes long after eating. Sometimes there is regurgitation of food. In bad cases there may be vomiting.

The treatment of these cases varies with the case. The general principle is that of giving a diet composed of food easily taken care of by the stomach, divided into several small single meals. For example, breakfast, 1 egg and 1 slice of toast or a saucer of cereal; 10-11 a.m., cracker or milk or hot bouillon and crackers; 1 p.m., mashed potato, rice or macaroni; 4 p.m., crackers and milk or egg and milk; 6 p.m. toast and simple pudding. Solid food is often better borne in such cases than liquid foods. Often we find that these patients eat almost nothing. They need plenty of food, and improve only when they get it.

The symptoms may be treated by giving bicarbonate of soda, a half teaspoonful at the time of distress; or if this fails of relief, spirits of peppermint or capsicum. Tincture of nux vomica may be used before meals.

Nervous dyspepsia is a term used to describe certain cases with stomach symptoms, where these symptoms are part and parcel of a condition of nerve instability, or of over-strained nerve condition, or of a mental condition where the mind is very much on the stomach. Treatment of such cases is principally the treatment of the underlying nerve conditions. Removal from conditions of worry, inculcation of proper habits of living, direct attention to treatment of the stomach, if only for the mental effect upon the patient, should be given. A diet should be written out. Often such patients do better on a good diet with meat, vegetables, etc., than on what is known as a diet of slop. Drugs may be useful, principally for their mental or reflex effect. Sometimes an initial exhibition of bromide for a time helps to start the patient right. Often the real trouble with these patients is constipation or a tendency to sluggishness of the intestines. Paraffin oil taken regularly relieves them.

DR. C. A. PORTER: I have endeavored to find statistics which will show the frequency with which chronic ulcer degenerates into cancer. The variation is very great and apparently depends upon the sort of case studied, and the point of view of the individual observer. In 1901, Mayo Robson stated that 59% of his cancer cases gave definite histories of chronic, intermittent attacks of indigestion. Smithies and Ochsner, in their book on "Cancer of the Stomach," tell us that of 921 cases, 47% gave definite symptoms of past dyspepsia of the peptic ulcer type. Wilson and McCarthy, from operative material examined at the Mayo Clinic, gave 71% as the proportion of cancer on ulcer. Lockwood does not agree with such figures, and found, in 146 cases, only 7% with histories of previous indigestion. He has traced, so far as possible, his ulcer

cases for the past twenty years, and believes that not more than 4% have symptoms suggesting malignancy. Smithies tells us that 32% of his series gave no history whatever of any previous gastric disturbance. We see, therefore, that even in such a common and well-known disease as gastric cancer, there is a difference of opinion between the internist and the surgeon on a very important, almost vital matter. I use the word vital because Smithies states that by the time the surgeon opened the abdomen of a patient diagnosed as cancer of the stomach, the lymph nodes were found already involved in 71%, the growth being at the pylorus or lesser curvature near the pylorus in 66%; in other words, in a part of the stomach most easily resected, also in that portion of the stomach most frequently affected with chronic ulcer. I will not go into methods of gastric diagnosis except to say that in a very large proportion of cases the diagnosis can be made with great accuracy, but at a stage too late for cure. It seems to me that laparotomy should be done when, in a patient of cancer age, a good internist fears the possibility of cancer of the stomach.

The surgical treatment of gastric cancer divides itself into three methods: preventive; radical, with a hope of cure; and admittedly palliative. Preventive treatment must depend upon the point of view of the surgeon as regards the subject already mentioned—cancer on ulcer. The mortality of pylorectomy varies with the skill and experience of the surgeon performing the operation, and is not the mortality of the best surgeons in the largest clinics. It may be estimated at from 5-15%,—in easy cases the lower figure or less; in difficult cases, or those in poor condition, nearer the upper figure. Whether simple gastroenterostomy with or without closure of the pylorus will heal the ulcer and prevent further malignant degeneration will probably be settled before long by accumulating statistics. A definite percentage of the pylorectomies done for what seemed clearly a chronic ulcer, have turned out, upon careful examination, to be cases of early cancer. The surgeon who might have done, in these cases, a pylorectomy, and instead does a conservative operation, is responsible, in a way, for the future outcome of this case. In other words, the surgeon doing, as a routine, conservative operations, will have a small operative mortality. The surgeon doing pylorectomy will have a larger primary mortality. What the ultimate outcome will be in the saving of deaths from cancer later remains a problem not yet thoroughly worked out and settled from the point of view of the surgeon.

Radical cure of cancer of the stomach: Smithies states that of a series of radical operations, 22% have lived from 2 to 5 years after radical operation; that from 10 to 20% have good hope of cure, about the same as the mortality of operation on the average case of cancer.

While I am a firm believer in early exploration in cases of doubt, it is clear that every effort should be made never to do even an exploratory operation in far advanced cases or in those in which a palliative operation is not indicated. The x-rays give us valuable information as to the extent of the lesion. A large immovable tumor with other symptoms and signs of cancer, without stasis, particularly contraindicates even an exploratory operation. Malignant glands in the left supraclavicular space show the incurability of the disease, and the surgeon has to consider only the advisability of a palliative operation. Ascites, involvement of the liver, metastasis in the bones, peritoneal carcinosis in the posterior cul-de-sac, as shown by rectal or vaginal examination, contraindicate, as a rule, even exploration.

The palliative operations are two,—partial gastrectomy to relieve cachexia, vomiting, hemorrhage, pain, etc., and drainage operations. There can be no doubt that in comfort and longer life, incurable patients who survive gastrectomy are definitely benefited. Whether these operations should or should not be done, depends upon the mortality of the individual surgeon and the conditions of the individual case. Some approach a palliative operation with timidity who are willing to take big risks so long as a cure is possible. Gastroenterostomy is definitely beneficial where the cancer has caused obstruction and starvation. It is surprising to see how some of these cases with numerous malignant glands put on weight, and almost make one question the accuracy of the diagnosis. Anterior gastroenterostomy in my hands, in these cases, has been almost as satisfactory as posterior, and is more easily and more quickly done in many. It is a question which must be decided again in each case, whether gastroenterostomy should be done to anticipate subsequent obstruction. Drainage operations, where there is no obstruction, and where the patient is run down from pain and cachexia, have seemed to me unsatisfactory. A two-stage operation is clearly of value in some cases. If the mortality from cancer of the stomach is to be diminished, earlier explorations must be done. If subsequent investigations prove that cancer on ulcer is anywhere near as common as some statistics seem to show, pylorectomy rather than gastroenterostomy, with or without burning of the ulcer, should be done more frequently in favorable cases. Attempts at radical cure carry with them, of necessity, a high mortality—probably about equal to the percentage of cures. Every surgeon must determine his duty in these cases, influenced by statistics, his own results, and the point of view of the patient.

PAPER OF DR. DANIEL F. JONES.

DISEASES OF COLON AND RECTUM.

DR. DANIEL F. JONES: It should be understood that "replacing" external hemorrhoids is a stupid procedure, because they do not belong inside the sphincter and will not stay there.

There are three procedures which may be followed in treating internal piles: (1) Clamp and cautery. (2) Ligature. (3) Whitehead operation. Of these, long experience shows that the clamp and cautery is the best for weak patients, and is as good, if not better, than other methods in its end results on all types of patients. The trouble with the ligature method is that the needle may enter a venous sinus and give rise to a serious thrombosis. The Whitehead operation is more complicated and thorough than the other methods, but does not prove more advantageous in point of recurrence, and often occasions much discomfort in the form of itching and moisture about the anus.

Fistula.—The old method of cleansing with a probe and iodine or some caustic substance does not give good results, and the fistula is almost sure to continue. The method of cutting across the sphincter at right angles, slitting open the fistula and allowing granulation to heal from below is the best.

The Elting procedure is to pull down a portion of the rectal mucosa over the internal opening. It is practical but rather complicated for non-expert hands.

Fissure.—Two methods are in vogue. In Boston, stretching the sphincter has proved adequate and safe during many years. In New York, stretching is considered bad technic, and the preference is given to incision in the sphincter in the region of the anococcygeal ligament.

Colitis.—The condition commonly called colitis is one which requires much study before a definite diagnosis can be made. Colitis may be bacillary, amebic, specific, tuberculous, or catarrhal in origin. A chronic appendix *per se* rarely, if ever, results in mucous colitis; it is the chronic appendix *with* adhesions which causes colitis. Though simple mucous colitis often comes from adhesions, adhesions do not necessarily always produce a mucous colitis. Colitis produces a characteristic picture in the sigmoid and rectum; malignant disease of the colon, tuberculous ulcer or ulcerative colitis may not. Hence the value of proctoscopy in ruling out colitis in questionable cases.

It is necessary and important to go on slight evidence in the diagnosis of diseases of the colon.

Cancer of the Colon.—Early cancer of the colon lends itself so remarkably to surgical cure that it is most important to make the diagnosis early. The signs are often misleading. The stools may not give a positive guaiac test even though blood and mucus be passed in the stool. The movements are often frequent and small. The x-ray is extremely misleading often, and should be taken more thoroughly. The proctoscope should be used. Small blood clots are highly suggestive. Operation (exploratory) should be done in suggestive cases.

Cancer of Rectum.—The results of operation are horrible. Forty per cent. of cases living five years after operation is a misleading figure; 6-10% of total number of cases seen is more accurate. The symptoms are late. Women put off any examination. Physicians do not make enough rectal examinations, and the defense that "patients won't stand for it," brands the physician who makes such apology.

Remember that though a healthy person may say, and the physician himself believe, that death is preferable to life with a colostomy, the patient will be willing to keep his life on terms not considered endurable.

Prolapse of the Rectum.—The anterior rectal wall bulges as a result of what should be regarded as a hernia of the posterior cul-de-sac. In women such a hernia of the pouch of Douglas is often called incorrectly a rectocele. The treatment should here be patterned on the treatment of hernia; the posterior cul-de-sac should be ligated high up.

A. GREGG, A.B.

MEDICAL MEETING IN THE AMPHITHEATRE OF THE PETER BENT BRIGHAM HOSPITAL.

TUESDAY EVENING, JAN. 18, 1916, AT 8.15 O'CLOCK.

The President, DR. HENRY A. CHRISTIAN, in the Chair.

EXHIBITION OF CASES.

DR. JOHN HOMANS: A case illustrating the differential diagnosis between perirenal abscess and retrocecal appendicitis.

PAPER OF DR. GILBERT HORRAX.

EXPERIMENTAL AND CLINICAL OBSERVATIONS ON THE PINEAL GLAND.

The results of recent investigation of the pineal body point very strongly toward its being a gland of clinical significance. A case of tumor of the pineal, about to be reported from the Surgical Service of the Peter Bent Brigham Hospital, showed the typical syndrome of Frankl-Hochwart, namely, signs of precocious adolescence combined with general pressure symptoms. At autopsy a diffuse struma of the pineal, very similar to a carcinoma, was demonstrated.

Experimentally, the problem of extirpating the epiphysis has been attacked by several investigators, notably Foa and Sarteschi. They reported much more rapid development of the primary and secondary sex characters in pinealectomized chickens and rats, respectively, over controls of the same litters.

Pinealectomy was carried out on a series of guinea-pigs in the Laboratory of Surgical Research at the Harvard Medical School during 1914-1915. Litters of young pigs, varying in age from four or five days to several weeks, were used, the controls being subjected to a similar operation as the experimental animals, except that the gland was not extirpated. Of the 144 experimental and control pigs, 90 survived; and of these, 20 females and 15 males were found to have been completely pinealectomized. The males showed an increase in size of both testes and seminal vesicles over their controls, the weight of the former averaging 854 mg. to the controls' 663 mg.; and of the latter, 763 mg. to the controls' 466 mg. Microscopically, the testes and seminal vesicles of the pinealectomized animals showed a more advanced picture than those of the controls. No changes were demonstrated in the females.

PAPER OF DR. W. W. CADBURY.

MEDICINE AS PRACTICED BY THE CHINESE.

There is a large element of superstition connected with the medical practice. It is based on a positive and negative principle, called the *yang* and the *yin*. Since anatomical dissections have been prohibited in the past, a very crude conception of human anatomy prevails.

The palpation of the pulse is the essential method of making a diagnosis. The pulses of both the patient's wrists are felt, the physician palpating with three fingers.

Many herbs and drugs are used. It is significant that ox-bile has long been used for jaundice; and other useful remedies,—rhubarb, pomegranate root, aconite, opium, arsenic, sulphur and mercury,—are found in the Chinese materia medica.

No surgery, in the modern sense of the word, is practiced by the Chinese physician.

Western medicine and surgery are rapidly coming to be recognized by the Chinese as having great superiority over their own primitive methods.

ERNEST G. GREY, M.D.

Book Reviews.

A Manual of Pharmacology. By WALTER E. DIXON, F.R.S., M.A., M.D., B.S., B.Sc., D.P.H., Professor of Materia Medica and Pharmacology at King's College, London; University Lecturer in Pharmacology, Cambridge; Examiner in Pharmacology in the Universities of Oxford and Cambridge, etc. Fourth edition completely revised. London: Edward Arnold, 1915.

The author, in a clear and condensed form, has given us a work which, as far as its technical value goes, will be of great value to students and physicians.

It begins, as do most other works of this character, with an explanation of the metric system, which at this late day, seemingly ought to be taught in the secondary schools rather than in medical schools and medical works. A succinct presentation of the character and action of alcohol follows, with a rather humorous explanation of its influence in arousing "Dutch courage" and "The brilliancy of the after-dinner speaker." The author regards it as a food in limited quantities, that is restricted to the ability of the body to oxydize it, because it acts as a sparer of fat and also of protein.

A group of excellent tracings of the action on the heart and pulse by different drugs is included, as well as a series of drawings illustrating the physiological action of drugs on the normal organ.

Preparations and doses follow the description of each drug, but being taken from the British Pharmacopeia, often fail to find their equivalent in the United States volume of the same character. The newer drugs, such as validol and veronal, are fully described and their action given in full.

But scanty mention is given of the theobromin group and their combinations, with sodium salicylate and sodium citrate, many of which have earned the justifiable regard of practitioners for their power to lower the blood pressure.

The author's views coincide with those of many others in regard to the unreliability of the various alkaloids which have been isolated from digitalis and recommends the old method, preparations of infusion and tincture.

Many of the preparations of the heavy metals—lead, copper and zinc, which are now being used less and less in medicine, are given equal importance with other drugs which still maintain their valuable properties in the mind of the physician.

Serum therapy and animal extracts are carefully described and the restrictions in regard to their use fully enunciated.

It seems rather strange, however, considering the immense value of anti-typhoid vaccine as shown by its successful use in the armies of the world, that it is referred to by the author as of doubtful value.

An excellent index closes the work, and as far as orientation with reference to the basic principles of organic therapy goes, no work offers greater facilities.

The Practical Medicine Series. Under the General Editorial Charge of Charles L. Mix, A.M., M.D. Vol. VI, General Medicine, edited by FRANK BILLINGS, M.S., M.D., and J. H. SALISBURY, A.M., M.D. Vol. VII, Obstetrics, edited by JOSEPH B. DELEE, A.M., M.D., with the collaboration of HERBERT M. STOWE, M.D. Chicago: The Year Book Publishers. 1915.

These two volumes, appearing simultaneously in the Practical Medicine Series for 1915, continue the presentation of a summary of progress in their respective fields during the preceding year.

The volume on general medicine is concerned chiefly with diseases of the alimentary tract, especially the stomach and intestines. The remainder of the volume is devoted to the infectious diseases. The work is illustrated with eight full-page plates and nineteen text cuts.

The volume on obstetrics makes a greater attempt at completeness and is divided under the headings of pregnancy, labor, puerperium and the new-born infant. Especial attention is devoted to pregnancy toxemia and twilight sleep. The book is illustrated with seven full-page plates, illustrating operative technic, and one text cut showing the plan of an infant incubator.

Both these volumes should be of distinct value and interest in summarizing recent progress for the benefit of the general practitioner.

Physical Diagnosis. By RICHARD C. CABOT, M.D., Assistant Professor of Medicine in Harvard University, Chief of the West Medical Service at the Massachusetts General Hospital. Sixth edition. New York: William Wood and Company. 1915.

The first edition of this book appeared in 1905. The appearance of the sixth edition ten years later is sufficient comment on its popularity, and the popularity is richly deserved. Dr. Cabot has a gift of simple and clear expression of his keen and straightforward observations and deductions. In the sixth edition the essential changes are in the section on the diseases of the heart. The recent advances in our knowledge of cardiac disease, which have been made possible by cardiographic methods, are adequately discussed. Substantial changes have been made in the section on diseases of the lung. The other sections present changes in proportion to medical advances.

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MEDICAL PREPAREDNESS.

THE three-day convention of the National Security League, recently held in Washington, served to present to the country in a definite way the views of those who insist upon preparedness. Although there are many who honestly believe that preparation for war is a temptation to fight, the majority of citizens of the United States would probably vote in favor of a more adequate national defense.

Next to the army and the navy, and perhaps equally with the railroad service, the medical profession is directly concerned with this question. Medicine bears upon the problem at many points. By the examination of recruits, the medical man insures fit material for the army and navy. Whenever numbers of men gather in camps, sanitation becomes of the greatest importance. Even with an army inactive, accidents are constantly occurring which demand a high type of surgical skill. If there is fighting, the medical corps must not only look after the personal hygiene of the men to keep them up to their greatest efficiency, but must render first aid, care for the wounded during transportation, and in hospitals far from the front and at times long after the battle, strive to make of the wounded man a healthy soldier or a self-supporting citizen.

The preceding points were brought out by Major Noble, of the U. S. A. Medical Corps, in his address to the Aesculapian Club on January eighth. Of an army engaged in war, the speaker said, the proportion of men sick or wounded comes to about 10%. Thus with an army of only 200,000, hospital facilities must be provided for 80,000.

In other words, 160 hospitals of 500 beds each would be required, and should be manned by surgeons and physicians of experience, assisted by specialists, such as radiographers, neurologists and dentists.

The work done at the front requires less surgical skill. There, the efforts of the medical man must be more in the direction of sanitation and the personal hygiene of the men. The free use of common sense based on a knowledge of medical facts will go far, but to be really efficient a man in this position should have some special military training such as is offered at Tobyhanna or by the correspondence courses given by the U. S. Government to members of the Medical Reserve Corps.

For the successful pursuit of surgery in a military hospital, on the other hand, a special knowledge of military matters is not, we believe, especially important. The principles of military surgery are not in any way different from those of civil practice. The conditions met with in wounds received in war are, it is true, rather different from the surgical problems encountered in times of peace. The former are unfamiliar to most surgeons because they are traumatic and potentially infected, whereas the majority of surgeons deal with wounds of their own infliction made under aseptic conditions. The principles of cleanliness and drainage applied to military surgery will bring good results, and the surgeon quickly becomes acquainted with minor differences. A competent surgeon very soon finds himself on his feet, so to speak, in a military hospital, and better results can be obtained by good surgeons skilled only in civil practice than by poor surgeons of military training.

The organization of such hospitals seems to be the most difficult part of the problem. For that reason the scheme suggested by Dr. George W. Crile, at the Clinical Congress of Surgeons, for the organization on paper of separate hospital units which may be assembled rapidly when needed, seems worthy of consideration. It is to be expected that the government will before long issue a definite policy for the reinforcement of the Army Medical Corps, either through the increase of the Medical Reserve Corps or by the formation of hospital units. When the way is indicated, it goes without saying that the medical profession will respond with the whole-heartedness with which it has served its country in the past.

PETER BENT BRIGHAM HOSPITAL.

THE first annual report of the Peter Bent Brigham Hospital contains a report of the work from the opening of the Hospital, March 31, 1913, to January 1, 1915. During the year 1913, 681 medical cases and 689 surgical cases were admitted; in 1914, 1391 medical and 1452 surgical cases. The Out-Door Department is open to receive patients from six in the morning until eight in the evening. It is interesting to notice that during the first six months, more patients came in the afternoon than in the morning, but during the second year, the morning hours had more than double the number of calls compared with the afternoon hours. The dietary department is worthy of special mention. The staff prescribe the units of nutrition that they wish administered to the patients. The dietitian works out the actual food that the patients have and reports back to the physician how she has accomplished the work. This leaves the dietitian free to use whatever seems best to meet the ends that the physician wishes accomplished, and had led to very good work with a class of diabetics in the out-door department. Lectures have been given to these diabetics, and the class has proven so successful that the out-door department is now contemplating forming a class in kidney troubles and another in heart lesions.

The beds of the hospital have been equally divided between medicine and surgery and the organization of the two services is similar. All of the officers serve throughout the year. The surgeon-in-chief gives his full working time to his hospital and medical school duties. His two junior associates give the major jart of their time, and when provision is made for them to have their own rooms in the institution they will undoubtedly give their undivided individual service. There are four salaried senior house officers of indefinite term of service—a resident surgeon and his three assistant residents, one of whom devotes himself for a year to the special field of neurological surgery and is directly responsible, in this work, to the surgeon-in-chief. Under these men come the eight house officers who are appointed in pairs every four months and serve for sixteen months; and under them, in turn, students serve as clinical dressers in the wards. The first patient was admitted to the surgical department on January 27, 1913. In the twenty-four succeeding months there were 2284 admissions, the average of the last three months being about 150 patients a month. The first patient in the medical service was admitted on March 31, 1913, and to December 31, 1914, there were 2110 admissions. Of this number 438 were readmissions. The condition of the 1613 patients who were discharged from the service during this period was as follows: Well, 182; improved, 817; unimproved, 361; untreated, 119; dead, 134.

TUBERCULOSIS LEGISLATION.

THERE are at present pending before the National and the Massachusetts Legislatures several proposed measures dealing with the care and control of tuberculosis, which deserve consideration at this time in view of the importance of the subject with which they deal.

Before the Federal House of Representatives there has been introduced by one of the congressmen of Massachusetts a bill aiming to standardize and to establish uniformity of method in the conflict with tuberculosis throughout the United States. The essence of the bill is contained in its following provisions:

"That the Secretary of the Treasury be, and he is hereby authorized to provide care and treatment for persons afflicted with tuberculosis, who are citizens of the United States, even though they may not be legal residents of the State in which they are temporarily located. That the Secretary of the Treasury shall have power to designate certain institutions in each State to receive such patients, said institutions to be subject to inspection by the public health

service of the United States. That the Secretary of the Treasury is hereby authorized to reimburse such qualified institutions a certain sum of money, not exceeding $1 a day, for each patient admitted with the approval of the Secretary of the Treasury. That this act shall take effect upon its passage."

It appears that this bill is intended to be a national extension of similar measures that have already been passed in several states. It embodies and provides for a form of national subsidy of state institutions similar to the state subsidy of local institutions now in effect in this Commonwealth. Though we are disposed not to approve of this principle of subsidy, it has in fact seemed to work well and not without justice in this community. Whether its extension may or may not be desirable, it seems that a centralization of control in dealing with tuberculosis throughout the country may be desirable and should, in part, be obtained by this proposed legislation.

Before the General Court of Massachusetts there have been introduced two bills (House Nos. 322 and 323) under the auspices and responsibility of the Massachusetts Association of Boards of Health. Both these proposed measures are intended to deal with incorrigible and wilfully careless tuberculates and to provide a means by which they may be isolated in order to prevent them from further spreading the disease. The text of thes two bills is as follows:

The first relates to the removal of persons infected with tuberculosis.

"*Section* 1. Whenever it shall appear to the State Department of Health or to the board of health of a city or town that, by reason of improper care, improper household conditions, or improper habits, the condition of a person suffering from tuberculosis is such as to endanger such person or his family or the public, and that the conduct of such person with regard to his health is not goverened in accordance with the advice of a person competent to advise with regard thereto, such board of health may request the justice of the police, municipal or district court having jurisdiction in the district wherein such person resides to order his removal either to some proper institution for the care of tuberculous patients in the locality in which the patient resides, or to some such institution maintained by the State. If the magistrate is satisfied, after such investigation as he may deem proper, that it is necessary or desirable for the welfare of the patient or his family or the public that he shall be so removed, an order shall issue from said court which shall authorize and instruct any constable, police officer or other agent to whom it may be directed to take custody of and remove such patient to the designated place, and to incur any necessary expense in connection therewith, including reasonable fees for the removing agent, such expense to be paid by the board requesting such removal. After such removal, the officer or agent making the same shall file such order, with his return thereon, with the court from which it issued. The person so removed shall remain in the institution until discharged by the authorities in charge thereof; and the officer in charge of such institution shall have authority to restrain the patient therein and to enforce compliance with the rules and regulations thereof; provided, however, that whenever the patient shall so request, in writing, the authorities in charge of said institution shall notify the justice of the court which has taken original cognizance of the case of the desire of such person to be discharged; and thereupon, after hearing, the court may order such discharge or take such action with regard thereto as may be deemed expedient, but the patient shall have the right to appeal to the Superior Court as in the case of crimes and misdemeanors. Any authority in charge of such institution shall, upon failure to communicate the request of a patient, as herein provided, be deemed in contempt of the court having jurisdiction.

"*Section* 2. In case any inmate of a sanatorium or hospital for the care and treatment of persons ill with tuberculosis persists in disobeying the rules of such institution and defying the orders of its officers, or conducts himself in such manner as to endanger the health or comfort of the other inmates, or the discipline of the hospital, the officer in charge of such institution may petition the police, municipal or district court having jurisdiction where said institution is located, and, in accordance with the provisions of the preceding section, the magistrate having jurisdiction may order the removal of such patient to any institution maintained by the State for the care and control of unruly or incorrigible tuberculous patients.

"*Section* 3. If it shall appear that the patient removed under the preceding sections is able to pay the cost of his care therein, or any part thereof, the magistrate ordering the removal shall order and require the patient to make such payment, and, upon failure so to do, the board of health or officer requesting such removal may bring civil action against the patient, in the ordinary manner provided by law, to recover the amount stipulated in the order.

"*Section* 4. Any action taken hereunder shall be in no wise considered a record of crime or misdemeanor against the patient involved.

"*Section* 5. This Act shall take effect upon its passage."

The second bill deals with the care and treatment of incorrigible tuberculosis patients:

"*Section* 1. The trustees of hospitals for consumptives, subject to the approval of the governor, are hereby authorized to take, in the name and for the use of the Commonwealth, land in fee by right of eminent domain or to purchase the same; and to erect and maintain on such lands, or upon lands previously taken for the maintenance of sanatoria, a hospital or hospitals for the custody, care and treatment of incorrigible and careless tuberculous patients, and for this purpose may expend a sum not exceeding ..... dollars.

"*Section* 2. Within sixty days after any land is taken under the provisions of this Act, the said trustees shall file and cause to be recorded in the registry of deeds for the county in which such land is situated a description thereof, sufficiently accurate for its identification, together with a statement of the purpose for which same is taken, which description shall be signed by a majority of said trustees; and such recording shall operate as a taking of the real estate therein described.

"*Section* 3. The trustees of hospitals for consumptives shall from the appropriation made for such purpose, pay all damages sustained by any person, firm or corporation by such taking under the authority of this Act. Any person, firm or corporation sustaining damages as aforesaid who fails to agree with said trustees as to the amount thereof, may have the same assessed and determined in the manner provided by law in the case of land taken for the laying out of highways, on application at any time within three years after the taking of such land in the manner above prescribed, but no such application shall be made after the expiration of said three years.

"*Section* 4. This Act shall take effect upon its passage."

Taken together these two measures should provide an effective means for dealing with the problem in question. Nearly identical bills were previously recommended by the recess committee of the legislature on tuberculosis, but failed to pass. In an opinion before this committee two years ago the attorney-general stated that further legislation on this subject should be enacted to make the law clear and unmistakable in regard to forcible isolation. The safeguarding of the community, the protection of those in health, and the prevention and ultimate control of the disease demand the passage of these measures. Individual physicians should not only approve these bills but should give their personal aid in securing their passage by writing to their senators and representatives, emphasizing their opinion of the need and importance of such legislation.

BOSTON LYING-IN HOSPITAL.

THE BOSTON LYING-IN HOSPITAL has recently issued an attractive pamphlet presenting a view of its proposed new building and outlining the history and present needs of the institution.

The Hospital was originally incorporated in 1832. It 1853 it was removed to a new building on Springfield street, now occupied by the Old Men's Home. Twenty years later it removed again to the present building at 24 McLean street, where its equipment has from time to time been enlarged by the purchase of additional houses and finally by the acquisition of the building of the Samaritan Hospital, on the corner of McLean and Chambers streets. At its various locations the hospital, since its inception, has cared for over twenty-two thousand women in its wards and over forty-five thousand in its out-patient department. During this same period, over six hundred nurses have studied in its training school, and two hundred and fifty house officers have graduated with its diploma.

Though the hospital has been remodeled from time to time and though the quality of its work has always been maintained at the highest level, despite occasional inadequacies of equipment, it is felt to be high time that the institution should have a building and organization adequate for its needs, equal to the best of modern standards and making it possible for the institution to perform the full amount of service of which it is capable which hitherto has been inevitably limited by its means and facilities. A site of land has, therefore, already been selected and purchased on the corner of Pasteur and Longwood avenues, opposite the Harvard Medical School, and tentative plans and designs have been drawn. This projected new hospital building will contain larger accommodations for patients, nurses, house officers and employees and will make the capacity of the hospital sufficient to meet the constantly increasing demand which is made upon it. The trustees confidently believe that the needs of the hospital are so deserving and that the larger service which it can thus render to the community is such that friends of the institution will freely contribute the funds required. A total sum of approximately $500,000 is needed to provide a building and equipment adequate to the necessities of the institution, about one-half of this being required for the main hospital, the remainder for a nurses' home, private ward, power plant and

laundry. It is desired by the trustees, who have in hand the raising of this money, that portions of this sum should be subscribed in the form of memorial gifts, for which the following suggestions are offered: memorial ward ($25,000), main operating room ($15,000), memorial hall and lecture room ($10,000), private room ($7,500), memorial bed, small operating room, laboratory, garden and grounds ($5,000 each). Other desirable endowments are a premature ward, library, nursery, museum and reading room. There is also need of a research fund of from $5,000 to $20,000.

The interest of the profession should be keenly concerned in these new plans for the Boston Lying-In Hospital. The work which this institution has done and its potential capacity for the future entitle it to adequate establishment with the other medical institutions in the hospital community developed about the Harvard Medical School. Contributors to the new building fund, or any who wish further information in regard to the plans of the hospital, should communicate with Dr. J. Collins Warren, 58 Beacon street, or with Mr. James R. Hooper, 87 Milk street, Boston.

MEDICAL NOTES.

THE RELATION OF FUR TO ANTHRAX.—In connection with a recent death from anthrax in New York, a question arose as to whether the disease might have been due to the wearing of an infected fur neckpiece. In the absence of any other definite clue as to the origin of this case, a fur collar which had been worn by the patient just prior to the development of her disease was suggested as being possibly responsible for the transmission of anthrax. This suggestion, which received considerable notice in the public press, caused a certain amount of apprehension among persons who wore furs.

While it has been proved again and again, that anthrax may develop among those who handle raw hides, among wool sorters, workers in mohair, and those who handle raw bristles as well, no authentic case of anthrax has ever been reported in one who had either worn or handled furs that had been subjected to the process of dressing and dyeing. A recent careful search of medical literature on this subject made, confirms this statement.

The process of dressing fur is one which cleanses it to a very considerable degree, although it does not sterilize the fur which is so treated. The cheaper grades of fur, in particular, are dyed with a variety of vegetable and aniline dyes. It is well known that the aniline colors are, to a very considerable degree, germicidal. While it is conceivable that furs might under special circumstances transmit anthrax, the likelihood of their doing so is so extremely remote as to make any fear or uneasiness on this score practically groundless. It may, therefore, be safely stated that the wearers of furs are as free from the danger of anthrax infection as any other members of the community.

DISEASE TRANSMITTED BY CIGAR CUTTERS.—Those who are familiar with habits of smokers when using cigar cutters, note that it is the practice of many persons before using a cigar cutter to moisten the tip of the cigar with the lips, before cutting it off.

It is evident that disease may possibly be transmitted in this way through the use of cigar cutters in tobacco shops. There are a number of different types of cigar cutters in use. In some only the knife blade comes in contact with the cigar. In others, the end of the cigar presses into a conical socket and the knife cuts off the projecting end. If cigars are moistened in the mouth, the type in which the cutting edge only comes in contact with the cigar, would not be apt to carry much infection, but the one with the conical socket would be very likely to transfer the saliva of persons wetting the cigar to the cigar of the next person using the cutter.

The New York Health Dept. suggests that the moistening of cigars before cutting be dispensed with as unnecessary, and that only cutters of the first type mentioned above be used. A conference will be held with proprietors of retail cigar stores, and the desirability of having sanitary cigar cutters will be presented to them.

MORTALITY FROM INFLUENZA AND PNEUMONIA IN NEW YORK.—During the week just closed, 1760 persons died in the City of New York, as compared with 1458 during the corresponding week of 1915. This increase of 302 deaths raised the death rate for the week 2.37 over that of the fourth week of 1915, the respective rates being 15.99 and 13.62. Five hundred and one deaths were reported as caused by influenza, bronchitis and pneumonia, 209 deaths more than were reported from these causes during the corresponding week of last year, but 58 less than the previous week this year. In other words the outbreak of grip and pneumonia appears to be definitely on the wane. Heart disease and nephritis showed an increase of 41 deaths. The acute infectious diseases showed a very slight increase, to wit: 7 deaths. The mortality of tuberculosis, on the other hand, was lower the past week than during the corresponding week of 1915. During the first four weeks of 1906, the death rate for the City was 16.47. The death rate for the corresponding period of 1915 was 14.89.

CENTRAL STATE HOSPITAL.—The recently published 45th annual report of the Central State Hospital, Petersburg, Va., states that there were cared for in that hospital during the year a total of 2242 patients. Of the number discharged, 143 were judged recovered and 81 improved. Of the 252 patients who died, seventy deaths were from general diseases, including pellagra, syphilis and tuberculosis. The superintendent of the hospital, William F. Drewry, in reporting the results of a visit through institutions for the insane and feeble-minded in New York and Massachusetts, states that he was especially impressed with the practicability and economic management of the colony plan of caring for the feeble-minded, and the chronic insane. "The institution and its Templeton colony, under the direction of Dr. Walter E. Fernald, is a wonder."

THE UNIVERSITY OF PENNSYLVANIA.—A new professorship of physiology, to be named after the late Dr. Isaac Ott, has recently been endowed at the University of Pennsylvania through a legacy received from his estate. Dr. Ott was a member of the American Physiological Society and a Fellow of the American Association for the Advancement of Science, and had made important contributions on the physiology and pathology of the nervous system.

APPOINTMENT OF A BELGIAN SCIENTIST.—It is announced that Dr. O. Van der Stricht, formerly professor of histology and embryology at the University of Ghent, Belgium, who had been a refugee in Holland since the outbreak of the war, has been appointed Fellow in Cytology at the Medical School of Western Reserve University, where he will devote his time to research.

NEW YEAR HONORS FOR BRITISH PHYSICIANS.—Among the British New Year honors recently announced, the order of knighthood is conferred upon three physicians, on Dr. George Andreas Berry, honorary surgeon oculist to the King in Scotland and ex-president of the Royal College of Surgeons of Edinburgh and of the Ophthalmological Society of the United Kingdom; on Dr. Thomas Wright Parkinson, physician to Prince Louis of Battenberg, to the Prime Minister, Mr. Asquith, and visiting physician to the Countess Lytton Hospital for Wounded; and on Dr. Milsom Rees, laryngologist to King George and Queen Mary and to Queen Alexandra.

EUROPEAN WAR NOTES.

BATTLEFIELD CASUALTIES.—The British War Office has recently issued a statement of the total losses of the British Army since the beginning of the war. In the January issue of the *Military Surgeon*, this statement is commented upon as follows:

"The proportion of killed to wounded works out almost exactly in the ratio of one dead for each three wounded. This was for all the forces in all zones and classes of military activity. No differentiation for the casualties in trench warfare has as yet been given out officially, but certain reports indicate that in such warfare about one person is killed to each two wounded. These figures are interesting in comparison with the proportion of 1:4 which had been accepted before the war, and indicates that the kind of warfare which is being conducted bears directly on the amount and character of transportation and hospital facilities required in the zone of such warfare. Our accepted basis for estimates on the clearance of the battlefield will, like so many other standards, doubtless have to undergo material modification."

WAR RELIEF FUNDS.—On January 29 the totals of the principal New England relief funds for the European War reached the following amounts:

Red Cross Fund	$143,095.37
Belgian Fund	92,897.71
American Ambulance	72,636.58
Serbian Fund	71,621.87
Allied Fund	53,968.80
French Wounded Fund	43,234.25
Armenian Fund	29,346.83
French Orphanage Fund	21,333.40
Surgical Dressings Fund	18,492.00
La Fayette Fund	17,479.99
Polish Fund	17,051.26
Italian Fund	15,078.55

BOSTON AND NEW ENGLAND.

THE WEEK'S DEATH RATE IN BOSTON.—During the week ending January 29, there were 323 deaths reported, with a rate of 22.15 per 1,000 population as compared with 226 and a rate of 15.75 for the corresponding week of last year. There were 10 deaths from influenza. Deaths from pneumonia and broncho-pneumonia numbered 65 against 32 last year.

There were 36 deaths under 1 year as compared with 33 last year, and 118 deaths over 60 years of age against 69 last year.

During the week the number of cases of principal reportable diseases were: Diphtheria, 83; scarlet fever, 91, measles, 59; whooping cough, 67; typhoid fever, 4, and tuberculosis, 50.

Included in the above were the following cases of non-residents: Diphtheria, 14; scarlet fever, 20; measles, 2; whooping cough, 1; tuberculosis, 4.

Total deaths from these diseases were: Diphtheria, 6; measles, 1; scarlet fever, 1; whooping cough, 1. and pulmonary tuberculosis, 19. Included in these were the following non-residents: Diphtheria, 1, and tuberculosis, 1.

RED CROSS MEETING.—On Monday of this week, January 31, a Red Cross mass meeting was held in Boston under the presidency of Governor McCall. Mr. Ernest P. Bicknell, director general of civilian relief of the American Red Cross, made an address based on his recent survey of the belligerent countries of Europe. Dr. Richard P. Strong, Professor of Tropical Medicine in the Harvard Medical School, spoke briefly on the efficiency of the American Red Cross; and Mr. Charles J. O'Connell, special representative of the American Red Cross in Mexico, described the conditions and the need of relief in that country.

REST ROOMS FOR EMPLOYEES.—The practice of establishing in large mercantile plants a rest room with a nurse or physician in charge has long since demonstrated its usefulness. An article urging the general adoption of this plan appears in the January 17 issue of *Current Affairs*, published by the Boston Chamber of Commerce, and states among other things that the Boston Association for the Relief and Control of Tuberculosis organized some months ago a committee on health in industry, and is working to conserve the health of the employee. Its secretary has recently called on a number of firms which are large employers of labor, to lay before them the benefits derived by both employer and employee from systematic medical and hygienic supervision of the latter.

"The work of the factory nurse, or, in a very large factory, the physician, comes under several heads, including, of course, first aid in case of injuries, and the subsequent care of wounds. Relief in minor ailments, such as headaches, cramps, indigestion and toothache, enables the employee to work instead of going home for the day. Prevention of the introduction and the control of communicable diseases among workers, as infectious diseases of the eye, etc., constitutes another important branch of the factory nurse's duties."

JOHN HARVARD FELLOWSHIPS.—A meeting for the recognition of scholarly attainment in medical studies was held at the Harvard Medical School an Friday of last week, January 28. After an address by Dr. Abner Post, the John Harvard fellowships and other academic distinctions for the year were announced. Following the meeting, an informal reception was held by the Students' Association.

EXAMINATION OF FOOD HANDLERS.—The offer of the Boston Health Department to examine all persons engaged in any pursuit which includes the handling of food, and to provide them with a certificate of health, is an important experiment in public health activity. Applications for examination are entirely voluntary, both on the part of the employer and of the person employed. Up to the present time the applicants have been mostly waiters and a few bakers, but one hotel has required all its employees engaged in any way in the handling of food to be examined. Both New York and Philadelphia have already established systems of examination, and there is a very possible source of danger of the influx of those to whom certificates have not been given, into cities where no such safeguard is in operation. In making the examination the Widal reaction is used to determine presence of typhoid. The possibility of tuberculosis is considered and sputum tests made with an examination of the family history. For venereal diseases, the throat, teeth and shins are examined. The Wassermann test is as yet optional on the part of the applicant.

DUST EXPERIMENTS.—A study of the dust conditions of the streets of Cambridge, Mass., has been made the subject of an investigation by Messrs. G. W. Whipple and Melville C. Whipple of Harvard University. Without considering in detail the effect on the health of a community, these investigators have taken measures of the dust content of the air at twenty feet above the street in different places in the city. At Brattle Street and Sparks, the lowest of the gathering places in material, the dust in the air would equal a daily deposit of nine and one-half pounds to the acre, while on Huron Avenue as much as nearly fifty pounds would be the daily deposit. These measures were taken in a windy season in spring, while summer readings showed about half as much dust, with quantities as small as two or three pounds for the minimum. The paved streets averaged a somewhat higher dust content of the air,—430 milligrams as against 402, although the bad, unpaved street rises to twenty-five per cent. higher content than the worst of the paved streets. The streets with car lines have a third more dust than streets without them, the best of them being generally worse than the worst of the free streets.

INCREASE OF HOG CHOLERA IN MASSACHUSETTS.—At a meeting of the animal inspectors of Eastern Massachusetts held in Boston last week, Dr. E. A. Cahill of the Massachusetts Department of Animal Industry, presented a paper on the alarming increase of hog cholera in this country. For the ten years prior to 1915 this loss was $60,000,000 annually. In Massachusetts during the past year 350 herds of swine have been inspected and 250 vaccinated. The death rate from hog cholera in untreated herds is from 85% to 100%, whereas with vaccination the death rate is reduced to 8%. It was also reported that during the three years since the closure of public watering troughs in Boston, the number of cases of glanders among horses in this city has decreased 57%. The same result has been noted in eight other cities and towns in Massachusetts where public watering troughs have been abolished.

Correspondence.

PARIS LETTER.

EUROPE AFTER THE WAR.

(From Our Special Correspondent.)

PARIS, Dec. 25, 1915.

Mr. Editor:

It has very likely occurred to my occasional readers that the letters I have been sending home during the last year have not been exactly medical! But my argument is this: During present circumstances, when all normal conditions have ceased, and the entire French medical corps is mobilized and badly overworked, such a thing as scientific life is practically altogether suspended. There is, therefore, very little strictly medical worth reporting. For months after the outbreak of war the usual medical papers, when they did appear, reached us in skeleton form; and their contents concerned nothing but army matters. Even now, although they are once more approaching their normal dimensions, their subject matter is still chiefly military, as is most natural. These articles are either surgical, or medical. As regards the surgeons, that estimable corps appears to be still irregularly proceeding in an uncertain formation of sixes and sevens! So many voices, so many opinions, Tincture of iodine seems to have been a grievous disappointment, in such mutilating warfare as this, and at the time of writing, different solutions of hypochlorite of soda hold first place in the surgical mind. Each man has his peculiar methods, his favorite antiseptic, or his serum or wash of predilection; and, in view of the well-known law, which it is almost an offence to recall,—it is likely that none of them are of very much value, otherwise their worth would be quickly apparent, in such an unlimited field as the present one. The only point that has any real importance is to get the badly wounded man under capable treatment in the very briefest space of time possible, and in this respect a marked improvement has unquestionably been effected, with the light motor-ambulance and the barrack-hospital just back of the lines. It is not evident that the eminent representatives of laboratory-surgery, mainly foreigners, who have been working in our field, have yet accommplished anything that seems likely to set fire to the traditional waters of the Thames; in fact, I do not mind stating very plainly that unquestionably the best results that I have yet seen,—at any rate in mangled limbs, joints, etc. (as he does not get cavity-lesions),—have been in the hands of what I might almost style an old-fashioned sawbones, who uses the methods of thirty years ago, sublimate, iodoform and strong carbolic! Still,—it is recognized by everyone that many roads lead to the eternal city; so that, so long as the wound is attended to promptly, opened up completely, all foreign bodies, splintered bones and badly-damaged tissues removed, and the limb immobilized in case of fracture, the maximum has been done. What little fads are indulged in subsequently make very little difference beyond supplying nutriment to each chief's special form of idiosyncrasy. In a word, then, while there is no particular progress to report on the surgical side, we can say that the last few months have shown considerable improvement in the handling of these awful wounds due to high-explosives, and that this branch of the medical service is now working in a fairly satisfactory manner.

But when we come to the medical side of the subject we find a very different state of affairs. The surprise of this war,—the most gratifying revelation,—has been the admirable record that the French people has established and that is now generally admitted by everybody. That an army that had been so severely handled in the beginning should have been able to regain its grip and do what the French army has since done, is already a credit to the nation that will last down through the ages to come. That a people with the characteristics the French were popularly supposed to have should have shown the silent but grim determination that has been general throughout the land, has been, I think, a shock to the universe from which it has not yet begun to recover. But there has been one unquestionable blot on the picture, and a serious one,—the handling of the army *medical* cases. This has really been something too awful, and if the history of this side of the question ever comes to be written, it could be fitly entitled: A treatise on how *not* to take care of the medical cases of an army in time of war. The fact seems to be that the organization of that branch was hopelessly bad even in time of peace, and apparently so utterly bad that it broke down so completely that everyone connected with it is so thoroughly disheartened as to be incapable of an effort to improve it so long as the war lasts. Later on it will have to be made over from the bottom up. The surgical clan were swamped, carried off their feet, at the beginning; but they pulled themselves together and, as above remarked, are now doing fairly well. As regards the medical side, there seems to be but one opinion.

So in the way of medical or surgical novelties I have not had much to draw on; and what little there was, the sensational serums and solutions of laboratory origin, found their way so rapidly into the ordinary daily organs of public opinion, that it has not seemed worth while to repeat them. On the other hand, chance has placed me right in the midst of the greatest event of all history; why not, then, confine my efforts to what is going on about me, snapshots on general aspects of the war as seen through a medical man's eyes? O,—you can take my word for it,—these letters could be made interesting enough, if I had a free hand; I think that without boasting I can say that if I were allowed to have my own way they would be the first thing many of the readers would look for on opening the B. M. and S. JOURNAL. But such, unfortunately, is not the case. America, it is said, is a neutral country. Its love of peace likewise knows no limits, resembling in this particular the firmament, wherein you pass from star to star, each one more and more remote, without ever reaching the end of it! Nothing, we are told, can appear in a neutral paper that can hurt anybody's feelings. Consequently, in presence of these limitations, I have to do the best I can,—hence these letters.

There is no lack of pathetic scenes in the public ways of Paris just now, for anyone who chooses to look; but one of the most touching is unquestionably the soldier on his first home-leave since the beginning of the war. For some reason or other the men were absolutely separated from their families for about the first twelve months; since then they have been allowed to visit them in rotation, and this plan is to continue during the coming winter. The men, fresh from twelve-months' trench warfare, are certainly a sight! They are generally spare, all superfluous fat gone, weather-beaten, and with a serious, fixed expression of features with lines by the mouth and nose. It is not for nothing that they have stared death in the face for fifteen months, and I imagine that if the war goes on another eighteen months or two years, as seems probable, it will evolve a type of Frenchman that will be something quite unknown. The long winter coat, buttoned back at the knees, once grayish-blue, is now of an indescribable neutral tint that is probably vastly superior, from a practical point of view, to its original color. The new helmet we have not yet learned to take seriously, although its usefulness in trench warfare has now been demonstrated beyond question. To me, it gives these fine fellows a species of medieval look, and I feel sure that if you put some old pikes in their hands they would do excellently as figurants in the soldiers' chorus of Faust. Their puttees and heavy shoes show signs of very rough usage. On their wrist is the chain fasten-

ing the identification plaque. On their fingers are one or more aluminum rings made from the enemy's shells. And on their bosoms may possibly be the Croix de Guerre, or Médaille militaire. In a word, "the real thing" in the way of a *permissionnaire* is so characteristic that you can spot him on sight, even if the importance and generally beatific antics of his accompanying family do not give him dead away. I saw one of these men the other evening in the Metro, a sergeant of the 415th regiment of the line, if you please,—which will give you some idea of what the French army has now grown to,—who, with a child on each knee and a spouse opposite, was so entirely taken up with his own temporary bliss and oblivious of his surroundings that I am sure, from their looks, that every woman in the compartment was dying to hug him then and there.

But why all this talk about men on leave? Well,—because it raises one of the most important questions of this war, the future of the race. I fancy from what I hear and read that people at home neither realize the importance of this struggle, nor grasp even approximately its extent: thus, I think it not unlikely, also from first-hand evidence, that the populations of the Pacific slope, in particular, attach a good deal more importance to the San Francisco exhibition than to the war in Europe. Yet let us take a few figures. The last Prussian published lists give a total loss of 2,316,000 men for that country alone; and very naturally the published lists must be considerably behind the actual losses. This is for Prussia alone, and does not include: Saxony, 224 lists; Würtemberg, 298; Bavaria, 233; the Navy, 40,—and other smaller ones. It will, therefore, not be far out of the way to estimate German losses as in the neighborhood of 4,000,000 already.* If to this we add the other great powers, Austro-Hungary, Russia and France, and those whose losses have been smaller, Great Britain, Italy, Turkey, Belgium and Serbia, it will be evident that the general casualty list of Europe is already something absolutely fantastic. Efforts have been made to arrive at a general, approximate figure, and it is thought fairly moderate to say that there have already been *killed* in Europe about 3,000,000 men of all countries, and otherwise placed *hors-de-combat* about 9,000,000. And it should be remembered that these are in the main the pick of the nations, men in the prime of life and in the best of condition. Now, as a simple term of comparison, let me remind the reader of the war of 1870-71. We all thought at that time that that was a pretty big war; and its effect on the Europe of the past 45 years has certainly been in relation with that view of the case. Yet, do you know what the *total* German casualties were for that campaign? You will scarcely believe it: 120,000 men. Compare this with our 12,000,000 above estimated. In other words, for one man lost then on the German side, one hundred have already been lost this time for the whole of Europe.

The French publish no lists at all; but the general estimate is that their losses are as 2 : 5, when compared with the German; and when we consider the absolutely reckless way in which the German troops were handled in the early stages, and the constant fighting that Germany has maintained on her Eastern frontier, this estimate seems fairly probable. The general ratio of killed to casualties has been one to three, 25%. This would give the German *dead* at one million, and the French at 400,000. With another year or two of war, and the more extensive fighting that is bound to come before the end, where shall we wind up, in the way of casualties! It positively makes the mind reel. In the paper, this morning, Lord Kitchener announces four million British soldiers for next March, and six million Russians; if he is right, and these men ever get to fighting, the casualty lists will rise pretty rapidly.

* Barthou's recent careful estimate gives 3,700,000.

So just try and imagine the state of a country like Germany at the end of this war, with, let us say, if the war goes on as expected, upwards of 2,000,000 men killed, hundreds of thousands crippled for life, other hundreds of thousands broken down for good through illness, privations and exposure, and countless ment only half-valid through minor wounds,—what a curious sort of a place it is going to be! And the same will hold good of all the other belligerent countries, though on a smaller scale, for by the very nature of things Germany's will be by far the most important losses. Then to this add the financial situation, the phenomenal taxes all these people are going to have to bear for the next few generations, since naturally this war is going to have to be paid for *some* day, however little the authorities say about that detail for the moment, and the infinity of desolation, misery and destruction in the invaded regions,—and you have a situation that is going to be simply unthinkable, appalling.

"S."

THE LAST ILLNESS OF ANNE OF AUSTRIA.

BOSTON, Jan. 21, 1916.

Mr. Editor:

Dr. Cabanes, in his work, "Les Morts Mystérieuses de l'Histoire," gives us some interesting side-lights on the history of the last illness of the great French Queen, Anne of Austria, who was married to Louis XIII on Oct. 25, 1615, and died of a cancer of the right breast on Jan. 20, 1666.

After some months of failing health and lassitude, Cabanes tells us, the Queen noticed a mass in the right breast, which caused her much concern. This was on the 10th of October, 1663. The superstition and empiricism of the times were such that the physicians in charge of the case allowed any one who said that they had a cure for the dreaded disease, to try their hand. The result in suffering and despair, after the poor Queen was buoyed up by false promises, can easily be imagined. The first empiricist was a priest, who assured the Queen that he had a sovereign remedy for cancer that would "harden the breast, to the point of its being like a stone." It was found that his application, an ointment, was composed of belladonna, and powdered and calcined greystone of Beauce. The application of this preparation caused the Queen to suffer extremely, and needless to say, did no good. The next experimenter, Cabanes tells us, was a certain Ailhut, a physician of Lorraine. His medicine was a purgative powder, the chief ingredient of which was scammony, and presumably he used it in the case of the Queen with no better result than the local application of the priest.

The celebrated Guy Patin followed every phase of the Queen's malady, and expressed himself warmly concerning the empirics who were allowed to treat her. Patin writes, "They talk of a great consultation at Saint-Germain, for the Queen Mother, to decide whether they should open the breast, to allow the pus to drain out, and the malignant secretions, which consume its substance from day to day.

"They speak also of a certain physician named Chatelain, that M. de Besons, the justice sent here from Frontignan: they pretend that he cures such maladies, and that he has some wonderful secret cures to use against incurable maladies. If he did not promise them something, they would not bring him from such a distance. All these are imposters. Cancer never disappears, and is never cured, but the people wish to be mistaken." (22 May, 1665.)

May 22 the Queen was seized with chills and erysipelas soon developed, which covered the entire arm and shoulder on the same side as the cancer. Patin tells us that both breasts were affected by the erysipelas, and that the Queen was so ill that extreme unction was administered. There was slight amelioration of the symptoms for a time after this (perhaps

due to the erysipelas), and the Queen was taken to Val-de-Gras. The respite was but short, however, for gangrene soon appeared in the tissues of the breast. The sufferings of the Queen were so great at this time that Cabanes tells us that the court feared for her reason. The empiric in charge at this time shaved off gangrenous areas of tissue as they appeared, each operation causing the Queen added suffering. Opium was given to the patient, and Patin remarks that this was the sole cause of a slight improvement in her condition at this time. The poor Queen is said to have spoken as follows: "One does not decompose until after death, but as for me, God has condemned me to rot while I am still alive."

January 8th. Patin writes: "The Queen Mother is in a deplorable condition; she is naught but a living skeleton."

Another charlatan was as this time called in, an empiric of Milan, who had another "marvellous ointment," but this was not even sufficient in its cleansing properties to do away with the frightful odor which came from the wound. The end could not be far off, and came on the 20th of January, 1666. The Queen was a victim of the ignorance of the times, in a measure, but also of a lack of even the ordinary rough surgery of the period, which might have made her hard lot more bearable. Shortly after this time we find Jean Astruc (1684-1786), the great French syphilographer and surgeon, advocating the total removal of the breast, *and the axillary lymphatic nodes*, as the only possible cure for cancer of the breast. Had the Queen reigned only a short time later, and such advice as Astruc's been sought early, she might have been cured, and certainly benefited.

W. P. C.

Miscellany.

BELGIAN PHYSICIANS' RELIEF FUND.

REPORT OF THE TREASURER OF THE COMMITTEE OF AMERICAN PHYSICIANS FOR THE AID OF THE BELGIAN PROFESSION FOR THE WEEK ENDING JAN. 22, 1916.

Dr. A. C. Kimberlin, Indianapolis, Ind.....	$5.00
Previously reported receipts.....	$7936.86
Total Receipts	$7941.86
Total disbursements.....	$7310.04
Balance	$631.82

F. F. SIMPSON, M.D., *Treasurer*,
7048 Jenkins Arcade Bldg.,
Pittsburg, Pa.

APPOINTMENTS.

Dr. John S. Billings, Jr., has been appointed deputy health commissioner of New York.

The following appointments are announced at Western Reserve Medical School:

Dr. J. Rogoff, formerly of the department of physiology and pharmacology, Vanderbilt Medical School, Nashville, to be instructor in experimental medicine; Dr. C. H. Fiske, formerly assistant in biological chemistry, Harvard Medical School, to be associate in biochemistry; *Dr. R. W. Scott*, formerly demonstrator of medicine, Western Reserve University, to be instructor in physiology.

BOSTON DISPENSARY.—The Boston Dispensary has recently appointed *Dr. William A. Hinton* as pathologist, to take charge of its laboratory work, which has developed greatly during the last two years under the direction of Dr. Sarah E. Coppinger.

SOCIETY NOTICES.

NORFOLK SOUTH DISTRICT MEDICAL SOCIETY.—Stated meeting at United States Hotel, Boston, Thursday, Feb. 3, 1916, at 11.30 A.M. Reader, Dr. John D. Adams, of Boston, for Dr. John H. Ash, of Quincy. Subject: "Diagnosis and Treatment of Spinal Affections."

F. H. MERRIAM, M.D., *Secretary*,
South Braintree, Mass.

THE HARVEY SOCIETY.—The sixth lecture of the series will be held at the New York Academy of Medicine, 17 West Forty-Third street, on Saturday evening, February 5, 1916, at 8.30 P.M., by Dr. Hideyo Noguchi of the Rockefeller Institute for Medical Research. Subject: "Spirochaetes."

NEW ENGLAND OPHTHALMOLOGICAL SOCIETY.—The next meeting of the New England Ophthalmological Society will be held at the Massachusetts Charitable Eye and Ear Infirmary, 233 Charles street, Boston, on Tuesday, February 8, 1916, at 8 o'clock

Program:

Hospital Cases

Papers

Retro-Bulbar Neuritis, with report of three cases. Dr. Leon E. White.

Symposium on Refraction (Continued). Paper by Dr Lancaster will open the discussion.

W. HOLBROOK LOWELL, M.D. *Secretary.*

MASSACHUSETTS GENERAL HOSPITAL.—A meeting of the Massachusetts General Hospital Clinical Society will be held Monday, February 7, at 7.15 P.M., in the Out-Patient Building Amphitheatre. Subject: Syphilis.

1. Cases of Congenital Syphilis, Dr. Durkin.
2. Pathological Lesions in Syphilis, with Special Reference to the Endothelial Leukocyte (Lantern slides), Dr. Beard.
3. Treatment of General Syphilis, Dr. Dwinell.
4. Treatment of Central Nervous System Syphilis, Dr. Kerr.

The visiting and administrative staffs, physicians, surgeons and students are cordially invited.

ELLIOTT C. CUTLER, M.D., *Secretary.*

RECENT DEATHS.

DR. CHARLES CLIFFORD BARROWS of Ithaca, N. Y., who died on January 3, was born in 1857. He was professor of gynecology at the Cornell University Medical School.

DR. W. A. BORGER, assistant director of the Pasteur Institute in Java, has died there from laboratory infection with bubonic plague. He was born in 1876.

DR. WALTER L. CAPSHAW, who died of pneumonia on December 25, 1915, at Norman, Okla., had been for seven years professor of anatomy at the University of Oklahoma. He was a graduate of the University of St. Louis.

DR. ALFRED IRA NOBLE, superintendent of the Kalamazoo State Hospital (Michigan Asylum for the Insane), died suddenly at Detroit, January 20, aged 58 years. He was born at Waterville, Me., and was a graduate of the Medical School of Maine (Bowdoin) in 1886. Until ten years ago he was at the State Hospital in Worcester, Mass. He had been a Fellow of The Massachusetts Medical Society since 1887, continuing his membership while in Michigan. A widow survives him.

DR. JOSIAH SWETT, 60, one of the leading physicians of Litchfield County, Connecticut, and for many years coroner's medical examiner for the towns of New Hartford and Barkhamsted, Conn., died of pneumonia at his home in New Hartford, January 20, after a week's illness. He was president of the New Hartford Electric Light Company. He leaves a widow and three sons. Dr. Swett was born in Bethel, Vt.